

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of Newcastle-upon-Tyne,

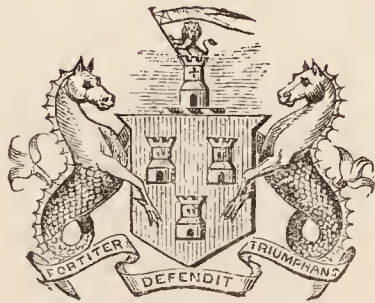
WITH

TABULAR RETURNS

OF THE

SICKNESS AND MORTALITY

DURING THE YEAR 1887.



Newcastle-upon-Tyne:

ANDREW REID, PRINTING COURT BUILDINGS, AKENSIDE HILL.

1888.

NEWCASTLE-UPON-TYNE :
ANDREW REID, PRINTING COURT BUILDINGS, AKENSIDE HILL.

TO MR. COUNCILLOR T. B. WINTER, CHAIRMAN OF THE SANITARY
COMMITTEE OF THE CORPORATION OF NEWCASTLE-UPON-TYNE.

SIR,

Herewith I beg to submit my Fourteenth Annual Report, viz.:—
that for 1887.

In brief, the principal features of the vital statistics contained therein as compared with those of the previous year, are—(1) a slightly lower Birth-rate and (2) an increase of 3 per 1,000 in the Death-rate. The latter is due more to general than to special diseases. Notwithstanding an absolute decrease in deaths from Scarlet Fever, Whooping-Cough, and Diarrhœa, Zymotic diseases (Febrile, Infectious, Respiratory, and Diarrhœal) shew a total increase of 127 deaths. This accounts for only about one-fourth of the general increase (515 deaths). The remainder is roughly accredited as follows:—

						Increase of deaths in 1887 over 1886.
Developmental Diseases (Premature Birth, Diseases of Infancy, and Old Age, etc.)...						60
Nervous	„	(Convulsions, Appoplexy, Brain Dis-				
		ease, etc.)	...	...	...	42
Circulatory	„	(Heart, etc.)	...	...	...	41
Respiratory	„	(Bronchitis, Pneumonia, etc.)	...	...	...	172
Digestive	„	...	...	...	...	28
Urinary	„	...	...	...	...	43
Deaths from Accident or Negligence						25
						<hr/> 411 <hr/>

The only Order of disease with any noteworthy improvement last year as compared with 1886 was that of Diarrhœal diseases, which shews a decrease of 33 deaths.

The increased mortality under the above-named causes is, I consider, very largely due to the sudden and often severe vicissitudes of temperature and weather generally experienced last year by the inhabitants of Newcastle.

With respect to Infectious disease notified in the city, there has been an increase of about 24 per cent. of cases as compared with the returns of

the previous year, chiefly under the heads of Typhus, Enteric, and Scarlet Fevers and Diphtheria. The relative general fatality of these diseases (deaths to total cases) is about 1 per cent. below that of 1886 (7·03 against 8·1). Enteric and Scarlet Fevers shew, however, a decrease in ratio of deaths to cases of 3·7 and 1·4 per cent. respectively, the rate of the former being 12·9 against 16·6, and of the latter 3·1 against 4·5 per cent. Diphtheria on the other hand has assumed a more fatal character, 34·4 per cent. of the cases having died against 26 per cent. in 1886, or an increased relative fatality of 8·4 per cent.

On pp. 18 and 19 of the Report the different notified infectious diseases are classified in Tables according to number of cases and rate of mortality at the different age-periods. These Tables shew that—

Small-pox has affected very few persons in the city, and none fatally.

No child under 2 years of age has suffered.

Typhus in a small outbreak has been confined to persons of the ages of from 5 to 60 years, the heaviest fatality (above 28 per cent.) falling on the fourth decade of life.

Enteric Fever, though affecting all ages from 1 year to 60 and upwards, has principally attacked persons aged between 5 and 30 years. The highest relative mortality has been between the 40th and 60th years of life (about 32 per cent.), and next between 30 and 40 years (29 per cent.).

Scarlet Fever, whilst affecting persons at all ages under 60 years and 1 above that age, has principally attacked the two first quinquennials of life, the second of these periods suffering in point of numbers affected rather more heavily than the first, and each of the latter three years of the first period much more heavily than the first two. The incidence of relative fatality among children from this disease has, however, been greatest on the first year of life (15 per cent.) Of 3 cases in the third decade of life one died, and of two between 40 and 60 years one also died.

Diphtheria has been relatively the most fatal (34 per cent.) of the Zymotic diseases, except Puerperal Fever, of which there has been only a small number of cases. It has affected persons at all ages under 60, but more than half of the cases have occurred in children under 10 years of age. The disease has been extremely fatal to infants, one only escaping with life out of 12 affected under three years of age. The survivor had not completed its first year when attacked. Between the ages of 30

and 40 years 9 cases without a death have been returned. The decade next in order of diminished fatality from Diphtheria is the third.

Puerperal Fever has affected 8 females between 20 and 40 years and 2 above these ages. The mortality has been at the rate of 40 per cent.

Various outbreaks of disease and other matters have formed the subjects of Special Reports, copies of which are given as Appendices.

Turning to a different section of the report, the steady and continued increase of *Housebuilding* of late years is remarkable. The amount of provision made under this head last year is, as usual, given in the body of the Report (p. 34). During the past six years new dwellings have been provided for separate families as under :—

A.D.	Families provided for.
1882	483
1883	728
1884	842
1885	1,031
1886	1,158
1887	1,114
Total ...	5,356

At the rate of 5 persons to a family, additional accommodation had thus been made in six years for 26,780 persons, and this notwithstanding the dullness of trade and a steady fall for some years past in the marriage market (see page 13).

According to the Registrar General the population has by no means advanced *pari passu* with the housing provided for it during recent years. The estimates of population of the City are—

For 1887	...	...	...	157,048
„ 1881	...	...	...	145,675
Estimated increase	...			<u>11,373</u>

The notes of my inspection of Building Plans as summarised on p. 35 do not enable me to speak very highly of the general character of the accommodation in the recently built tenements and the smaller class of self-contained dwellings.

It appears to be a general principle to try to get as many rooms, and especially bedrooms, as possible into a given space. The result is the

erection of unhealthily small sleeping apartments, an evil which the present Building Bye-laws, instead of checking, absolutely encourage and induce. Thus a certain regulation requires a minimum height of 8 feet in attic rooms through no less than one half of their area. In practice this is systematically complied with by *reducing the attic at the sides or wherever the roof is less than 8 feet from the floor; thus largely diminishing the amount of otherwise available cubic space in the apartment*—a course diametrically opposed to the intention of the regulation.

I have the honour to be,

Sir,

Your obedient Servant,

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

Health Department,

Town Hall,

Newcastle-upon-Tyne,

13th April, 1888.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

REPORT, 1887.

(A.)—GENERAL STATISTICS.

DURING the 52 weeks ended 31st December, 1887, 6,123 births and 3,953 deaths have been registered in the City. The births represent a rate of 38·9 and the deaths a rate of 25·2 per 1,000 of a population of 157,048 at all ages, as estimated by the Registrar General to the middle of the year.

The following is a Table of the recorded rates of mortality for previous years :—

RATES OF MORTALITY PER 1,000 POPULATION OF NEWCASTLE-UPON-TYNE.

A.D.								Rate per 1,000.
1868	...	...	...	...	...	...	...	27·1
1869	...	...	...	...	...	...	...	27·2
1870	...	...	...	...	...	...	...	25·4
1871	...	...	...	...	...	...	...	32·2
1872	...	...	...	...	...	...	...	26·3
1873	...	...	...	...	...	...	...	30·1
1874	...	...	...	...	...	...	...	29·2
1875	...	...	...	...	...	...	...	26·1
1876	...	...	...	...	...	...	...	22·7
1877	...	...	...	...	...	...	...	22·3
1878	...	...	...	...	...	...	...	23·7
1879	...	...	...	...	...	...	...	23·5
1880	...	...	...	...	...	...	...	22·3
1881	...	...	...	...	...	...	...	21·7
1882	...	...	...	...	...	...	...	23·0
1883	...	...	...	...	...	...	...	25·4
1884	...	...	...	...	...	...	...	23·5
1885	...	...	...	...	...	...	...	26·0
1886	...	...	...	...	...	...	...	22·2
1887	...	...	...	...	...	...	...	25·2*

The number of births and deaths in the different Registration Sub-districts of the City during 1887 and the previous year is subjoined :—

REGISTRATION SUB-DISTRICTS.			BIRTHS.		DEATHS.	
			1886.	1887.	1886.	1887.
Westgate	...	...	2,627	2,759	1,508	1,611
St. Andrew's	...	...	609	565	341	414
St. Nicholas'	...	...	285	269	400	437
All Saints'	...	...	976	917	508	602
Byker	...	...	1,606	1,613	681	889
City	...	...	6,103	6,123	3,438	3,953

* A Table shewing the Death-rates of other Cities and large Towns is given in Appendix A, p. 37.

Deaths in Public
Institutions

The deaths in Public Institutions during the year under report are as follows :—

DEATHS IN PUBLIC INSTITUTIONS IN THE DIFFERENT REGISTRATION SUB-DISTRICTS
DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887.

REGISTRATION SUB-DISTRICTS.	INSTITUTION.	DEATHS.
Westgate	{ Workhouse St. Joseph's House... ..	207 30 — 237
St. Andrew's	{ Moor Small-pox Hospital... Magdalene do. ... Hospital for Incurables ...	... 3 6 — 9
St. Nicholas'	{ Infirmary Fever Hospital Children's do.	203 19 8 — 230
All Saints'	<i>Nil.</i>	...
Byker	<i>Nil.</i>	...
	Total	476

Deaths from
Miasmatic order
of Zymotic
Diseases.

The condition of the different Registration Sub-districts in regard of mortality from the Miasmatic order* of Zymotic diseases during last, as compared with the preceding year, is as follows :—

SUB-DISTRICTS.	Number of Deaths from Miasmatic Diseases.	
	1886.	1887.
Westgate	124	117
St. Andrew's	16	35
St. Nicholas'	15	36
All Saints'	27	95
Byker	60	122
City	242	405

* See Appendix, Table III. In uniformity with the Classification of causes of death, adopted by the Registrar General, Diarrhœal diseases are now excluded from the Miasmatic order of the Zymotic class of diseases.

The mortality from the “chief Zymotic diseases”* during successive seasons of the year is as follows:—

Mortality from chief Zymotic Diseases.

REGISTRATION SUB-DISTRICTS AND CITY.																															
	WESTGATE.†					ST. ANDREW'S.				ST. NICHOLAS.				ALL SAINTS.				BYKER.					CITY.								
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total.	
Small-pox
Measles
Scarlet Fever (Scarlatina)
Diphtheria
Whooping-Cough
Typhus Fever
Enteric (or Typhoid) Fever
Simple Continued and Ill-defined Fever
Simple Cholera
Diarrhoea, Dysentery

* Corrected by distribution of those occurring in the Fever and Small-pox Hospitals to the District from which each patient was removed. † Exclusive of Benwell and Fenham.

Measles.

The most fatal Zymotic disease has been Measles, from which 211 deaths are returned. Of these, 102 occurred in the second quarter of the year.

Bronchitis and
Pneumonia.

DEATHS FROM BRONCHITIS AND PNEUMONIA.

A.D. 1887.	REGISTRATION SUB-DISTRICTS.					CITY.	Number in previous year (1886).
	Westgate (Workhouse)	St. Andrew's.	St. Nicholas' (Infirmary).	All Saints'.	Byker.		
1st Quarter ...	69	25	11	31	37	173	129
2nd „ ...	39	10	11	24	26	110	113
3rd „ ...	30	9	7	21	14	81	62
4th „ ...	76	20	17	38	54	205	120
Year ...	214	64	46	114	131	569	424
Number in pre-vious Year (1886) ...	182	48	29	93	72	424	...

INFANT MORTALITY.

Infant Mortality.

The number of Infants dying before the completion of the first year of life is 1,066, as compared with 951, 1,007, and 949 respectively, in 1886, 1885, and 1884.

REGISTRATION SUB-DISTRICTS.				No. 1. Deaths of Children under 1 year of age.		No. 2. Rates per cent. of Deaths under 1 year to Births registered.	
				1886.	1887.	1886.	1887.
Westgate	...	...	...	396	436	15·0	15·8
St. Andrew's	...	...	...	98	108	16·0	19·1
St. Nicholas'	...	...	...	52	66	18·2	24·5
All Saints'	...	...	...	152	163	15·5	17·8
Byker	...	...	...	253	293	15·8	18·2
City	...	...	...	951	1,066	15·6	17·4

The following are the most prominent diseases causing the infant mortality :—

	DEATHS.	
	A.D. 1886.	A.D. 1887.
Measles	10	51
Whooping-Cough	52	28
Diarrhoea, Dysentery	95	68
Tabes Mesenterica	22	32
Premature Birth	89	107
Inflammation of Brain or Mem-branes	26	27
Convulsions	117	140
Bronchitis	63	107
Pneumonia	36	53
Debility, Atrophy, and Inanition..	225	215
TOTAL	735	828

UNCERTIFIED DEATHS.

That is to say, deaths registered without any proper medical certificate having been given or inquest held, have contributed 125 cases to the general mortality, as compared with 94 during the previous year. See Appendix A, Table IX.

Uncertified Deaths.

MARRIAGES.

During the year ending March 31st, 1887, the number of marriages registered in Newcastle-upon-Tyne* was 1,705.

Marriages.

RETURN OF MARRIAGES IN NEWCASTLE-UPON-TYNE DURING THE PAST 10 YEARS (1878-87),

Year ended March 31.	Number.	Year ended March 31.	Number.
1878	1,697	1883	1,872
1879	1,646	1884	1,902
1880	1,700	1885	1,730
1881	1,717	1886	1,729
1882	1,428	1887	1,705

INFECTIOUS DISEASE INQUIRY.

CASES OF INFECTIOUS DISEASE KNOWN TO THE HEALTH DEPARTMENT.

During the year under report a total of 1,763 cases of Infectious Diseases† have been made known to the Medical Officer of Health by medical practitioners, under the “Newcastle-upon-Tyne Improvement Act, 1882,” and otherwise, including the following :—

Notification of Infectious Disease

				CASES KNOWN TO THE HEALTH DEPARTMENT.	
				A.D. 1886.	A.D. 1887.
Small-pox	...	...	...	5	7
Typhus	...	...	...	1	37
Enteric Fever	...	...	...	205	325
Simple Continued Fever	...	...	...	44	86
Scarlet Fever	...	...	...	1,004	1,208
Diphtheria	...	...	...	73	90
Puerperal Fever	...	...	...	14	10
Relapsing Fever	...	...	...	2	...
TOTAL	...	...	...	1,348	1,763

* Superintendent Registrar's district, which includes the Municipal area and the Townships of Benwell and Fenham.
† A street list of the cases is given in Appendix A, Table X.

The following Tables shew the monthly returns of the diseases above-named in the respective Parishes, etc., of the City :--

SMALL-POX IN NEWCASTLE-UPON-TYNE.

Small-pox in different Parishes, &c., during successive months.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.										
PARISHES OR TOWNSHIPS.										
A.D. 1887.		Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January ...	...	...	...	...	...	...	...	...	...	...
February ...	...	...	...	...	...	...	...	...	...	...
March ...	...	...	...	...	...	...	...	...	...	...
April ...	...	...	...	...	2	...	...	...	...	2
May ...	...	...	...	...	2	...	...	...	...	2
June ...	...	1	...	...	...	...	...	...	...	1
July ...	...	...	...	...	...	...	...	...	...	...
August ...	...	...	...	1	...	...	...	...	...	1
September ...	...	...	...	...	...	...	...	...	...	...
October ...	...	...	...	...	...	...	...	...	...	...
November ...	...	...	...	1	...	...	...	...	...	1
December ...	...	...	...	...	...	...	...	...	...	...
Total ...	...	1	...	2	4	...	...	...	...	7

TYPHUS FEVER IN NEWCASTLE-UPON-TYNE.

Typhus Fever in different Parishes, &c., during successive months.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.										
PARISHES OR TOWNSHIPS										
A.D. 1887.		Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January ...	...	...	...	...	...	...	...	...	...	...
February ...	...	1	...	...	...	...	...	...	...	1
March ...	...	...	...	...	...	...	1	...	...	1
April ...	...	...	...	1	...	...	8	...	8	17
May ...	...	...	...	...	1	2	9	...	2	14
June ...	...	2	...	...	2	...	...	...	...	4
July ...	...	...	...	...	...	...	...	...	...	...
August ...	...	...	...	...	...	...	...	...	...	...
September ...	...	...	...	...	...	...	...	...	...	...
October ...	...	...	...	...	...	...	...	...	...	...
November ...	...	...	...	...	...	...	...	...	...	...
December ...	...	...	...	...	...	...	...	...	...	...
Total ...	...	3	...	1	3	2	18	...	10	37*

* Two of these cases were admitted to Hospital suffering from Enteric Fever, and afterwards contracted Typhus.

ENTERIC FEVER IN NEWCASTLE-UPON-TYNE.

Enteric Fever
in different
Parishes, &c.,
during successive
months.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.									
A. D. 1887.	PARISHES OR TOWNSHIPS.								
	Elswick.	Westgate.	St. Andrew's	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, includ- ing Heaton.	Total.
January ...	5	5	..	..	1	4	..	..	15
February ...	3	9	1	..	..	..	..	1	14
March ..	5	4	1	1	..	3	..	3	17
April ...	3	3	2	..	1	5	..	3	17
May ...	8	6	3	2	1	8	1	1	30
June ...	6	2	4	..	1	7	1	..	21
July ...	5	1	2	1	3	..	1	3	16
August ...	10	10	12	1	2	5	1	9	50
September ...	3	8	21	1	..	5	..	7	45
October ...	6	8	9	1	..	5	..	6	35
November ...	9	6	6	..	..	5	..	7	33
December ...	9	4	9	1	..	1	..	8	32
Total ...	72	66	70	8	9	48	4	48	325

CONTINUED FEVER IN NEWCASTLE-UPON-TYNE.

Continued Fever
in different ,
Parishes, &c.,
during successive
months.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.									
A. D. 1887.	PARISHES OR TOWNSHIPS.								
	Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January	1	..	..	..	..	..	..	..	1
February	1	..	1	..	..	..	..	1	3
March	1	2	..	1	..	..	..	..	4
April	1	..	..	..	..	..	..	..	1
May	1	1	..	1	..	2	..	..	5
June	5	1	..	..	..	..	..	1	7
July ... ..	..	..	..	..	..	..	..	..	..
August	4	9	4	3	..	..	..	3	23
September	3	4	7	1	..	2	..	8	25
October	1	..	..	..	..	..	..	7	8
November	1	..	..	..	..	2	..	4	7
December	1	1	..	..	..	..	..	..	2
Total	20	18	12	6	..	6	..	24	86

Scarlet Fever
in different
Parishes, &c.,
during successive
months.

SCARLET FEVER IN NEWCASTLE-UPON-TYNE.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.									
PARISHES OR TOWNSHIPS.									
A.D. 1887.	Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January	12	22	6	6	1	14	3	13	77
February	8	11	7	1	...	12	6	23	68
March	6	5	6	3	...	17	6	22	65
April	17	18	2	...	3	2	4	14	60
May	6	7	8	2	...	7	4	24	58
June	10	3	4	3	1	9	1	24	55
July	22	7	5	4	...	6	...	13	57
August	36	9	15	2	3	20	2	19	106
September	40	7	11	3	7	19	4	42	133
October	81	20	23	3	2	26	7	43	205
November	186	10	8	2	...	14	5	21	246
December	27	14	6	2	...	5	3	21	78
Total	451	133	101	31	17	151	45	279	1,208

Diphtheria
in different
Parishes, &c.,
during successive
months

DIPHTHERIA IN NEWCASTLE-UPON-TYNE.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.									
PARISHES OR TOWNSHIPS.									
A.D. 1887.	Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January ... ..	...	1	...	2	...	...	...	...	3
February ... ..	...	...	...	...	...	...	1	...	1
March ... ..	...	1	...	...	...	2	...	1	4
April ... ..	...	...	1	...	...	1	...	4	6
May	1	...	...	...	...	1	...	2	4
June	2	1	...	...	...	3	...	7	13
July ... ..	...	...	...	...	...	...	...	4	4
August	2	2	3	...	3	...	...	...	10
September	2	1	2	1	...	...	1	4	11
October ... ..	...	2	...	3	...	1	...	2	8
November	1	...	4	...	...	...	...	1	6
December ... ..	...	3	2	...	...	1	2	12	20
Total	8	11	12	6	3	9	4	37	90

PUERPERAL FEVER IN NEWCASTLE-UPON-TYNE.

Puerperal Fever
in different
Parishes, &c.,
during successive
months.

NUMBER OF CASES KNOWN TO THE HEALTH DEPARTMENT.											
PARISHES OR TOWNSHIPS.											
A.D. 1887.			Elswick.	Westgate.	St. Andrew's.	St. John's.	St. Nicholas'.	All Saints'.	Jesmond.	Byker, including Heaton.	Total.
January	...	...	...	...	...	...	...	...	...	1	1
February	...	...	1	...	...	...	...	...	...	2	3
March	...	...	...	...	...	...	...	...	...	...	...
April	...	...	...	...	...	...	...	...	...	...	...
May	...	...	...	...	...	...	...	...	...	...	...
June	...	...	...	...	...	...	...	...	...	1	1
July	...	...	...	...	...	...	...	...	1	...	1
August	...	...	...	1	...	...	...	...	...	...	1
September	...	...	...	1	...	...	...	...	...	...	1
October	...	...	...	...	...	...	...	...	...	...	...
November	...	...	...	...	...	...	...	...	...	1	1
December	...	...	...	...	...	...	...	1	...	...	1
Total	...	...	1	2	...	...	...	1	1	5	10

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1887.

DISEASES NOTIFIED.	Under 1 Year.	1 Year and under 2.	2 Years and under 3.	3 Years and under 4.	4 Years and under 5.	Total under 5 years.	5 Years and under 10.	10 Years and under 15.	15 Years and under 20.	20 Years and under 30.	30 Years and under 40.	40 Years and under 60.	60 Years and under 80.	80 Years and upwards.	Age not stated.	TOTAL.
Small-pox ...	...	...	1	...	...	1	1	1	2	1	1	...	...	...	...	7
Typhus Fever ...	...	...	...	...	...	...	3	8	5	8	7	6	...	...	...	37
Enteric "	...	2	7	8	11	28	56	79	50	69	17	22	1	...	3	325
Continued "	...	1	4	4	5	14	24	18	9	16	4	1	...	...	...	86
Scarlet "	40	54	95	117	121	427	462	206	56	34	18	2	1	...	2	1,208
Diphtheria...	4	5	3	6	10	28	21	10	6	12	9	4	...	...	...	90
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	4	4	2	...	...	...	10
Relapsing "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL ...	44	62	110	135	147	498	567	322	128	144	60	37	2	...	5	1,763

DEATHS AND DEATH-RATES, A.D. 1887, AT DIFFERENT ÆTAL-PERIODS.

AGES.	SMALL-POX.		TYPHUS.		ENTERIC FEVER.		CONTINUED FEVER.		SCARLET FEVER.		DIPHTHERIA.		PUERPERAL FEVER.		RELAPSING FEVER.		TOTAL.	
	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.	Deaths.	Percentage of Deaths to Cases Notified.
Under 1 year	6	15.0	3	75.0	...	...	...	...	9	20.0
1 Year and under 2	2	3.7	5	100.0	...	...	...	...	7	11.5
2 Years and under 3	1	14.3	...	...	8	8.4	3	100.0	...	...	...	...	12	11.0
3 " " 4	1	12.5	1	25.0	4	3.4	1	16.6	...	...	...	...	7	5.2
4 " " 5	1	9.0	...	...	6	5.0	6	60.0	...	...	...	...	13	8.8
Total under 5 Years	3	10.7	1	7.1	26	6.1	18	64.3	...	...	...	...	48	9.6
5 Years and under 10	3	5.4	2	8.3	9	1.9	7	33.3	...	...	...	...	21	3.7
10 " " 15	3	3.8	...	...	1	0.5	1	10.0	...	...	...	...	5	1.5
15 " " 20	1	20.0	8	16.0	1	11.1	...	...	2	33.3	...	...	...	...	12	9.4
20 " " 30	13	18.8	1	6.2	1	3.0	1	8.3	...	...	...	...	18	12.5
30 " " 40	2	28.6	5	29.4	...	...	...	...	...	...	...	...	...	...	8	13.3
40 " " 60	1	16.6	7	31.8	...	...	1	50.0	2	50.0	...	...	...	...	12	30.8
60 " " 80
80 Years and upwards
Ages not stated
TOTALS	4	10.8	42	12.9	5	5.8	38	3.1	31	34.4	4	40.0	...	...	124	7.03

Deaths and Death-rates at different Ætal-periods.

SMALL-POX IN THE CITY.

Small-pox.

The undermentioned details refer to the cases of Small-pox during the year 1887.

Fresh cases—

In 6 households—single cases	...	...	...	6
In 1 Public Institution (see Table, page 27)	...			1
Total	...	...	...	<u>7</u>

In relation to
Households, &c.

Of the infected houses—

1	consisted of	1 room.
3	„ „	2 rooms each.
1	„ „	3 „
1	„ „	4 „

Of the sick-rooms of the 6 different houses, 5 are returned as being not at all isolated from the rest of the premises, the family either living in the sick-room or having direct access to it. In 4 of the houses no means were being taken to prevent the spread of infection; in 6 cases removal to Hospital was agreed to and effected.

10 occupants of the infected houses were employed at shops, etc., or in occupations elsewhere, as shewn on Table at page 29.

The following business was carried on on infected premises, whereby infection was liable to be communicated to customers:—

Character of Infected Premises, etc.	Household.	Case.
Dressmaker's	1	1

Cases illustrating how infection is believed to have been spread:—

- May 16th.—Case 2, at Monk Street. Infection is believed to have been contracted by visiting a suspected case of Small-pox at Monk Street.
- May 31st.—Case 3, at Monk Street. Patient probably caught infection from a case of Small-pox in same tenement (case 2).

TYPHUS FEVER.

Typhus Fever.

The undermentioned details refer to the cases of Typhus Fever during the year 1887.

Fresh cases—

In 14 households—single cases	...	...	...	14
„ 2 „ 2 cases each	...	...	...	4
„ 2 „ 3 „ „	...	...	...	6
„ 1 household—8 „ ...	...	...	...	8
				—32
In 2 Public Institutions (see Table, page 27)	...			5
Total	...	...	...	<u>37</u>

Of the infected houses—

In relation to
Households, &c.

10, or about 53 per cent., consisted of 1 room each.					
4	„	21	„	„	2 rooms „
3	„	15	„	„	3 „ „
2	„	11	„	„	4 „ „
<hr/>					
19					
<hr/>					

Of the sick-rooms in the 19 different houses infected, 15 are returned as not at all isolated from the rest of the premises, the family either having direct access to, or living in, the sick-room. In 34* cases removal to Hospital was agreed to and effected.

23 occupants of the infected houses were employed at shops, etc., or in occupations elsewhere, as shewn on page 29.

The following businesses were carried on on infected premises, whereby infection was liable to be communicated to customers:—

Character of Infected Premises, etc.	No. of	
	House-holds.	Cases.
Grocer's shop 	1	1
Barber's shop 	1	1

For report on *Outbreak of Typhus*, see Appendix F.

ENTERIC FEVER IN THE CITY.

The undermentioned details refer to Enteric Fever during the year 1887. Enteric Fever.

Fresh cases—

In 222 households—single cases	...	...	...	222
„ 14 „ 2 cases each	...	...	...	28
„ 14 „ 3 „ „	...	...	...	42
„ 2 „ 4 „ „	...	...	...	8
„ 2 „ 5 „ „	...	...	...	10
„ 1 household—6 „ ...	...	...	...	6
				<hr/> 316
In 2 Public Institutions (see Table, page 27)	...	...	...	9
Total				<hr/> 325 <hr/>

Of the infected houses—

In relation to
Households, &c.

39, or about 15 per cent., consisted of 1 room each.					
77	„	30	„	„	2 rooms „
58	„	23	„	„	3 „ „
81	„	32	„	„	4 „ „ (or more).
<hr/>					
255					
<hr/>					

* Two of these cases were admitted to Hospital suffering from Enteric Fever, and afterwards contracted Typhus.

Of the sick-rooms in the 255 different houses infected, 124 are returned as not at all isolated from the rest of the premises, the family either having direct access to, or living in, the sick-room. In 122 of the cases no means to prevent infection were being taken; in 76 cases removal to Hospital was agreed to and effected.

298 occupants of the infected houses were employed at shops, etc., or in occupations elsewhere, as shewn on page 29.

The following businesses were carried on on infected premises, whereby infection was liable to be communicated to customers:—

Character of Infected Premises, etc.	No. of		Remarks made at date of Inquiry.
	House-holds.	Cases.	
Milk Purveyors	2	3	In 1 case there was no isolation, and in both the families had access to sick-room.
Dressmakers	2	2	In 1 case there was no isolation, and the family were living in the sick-room. In the other the family had access to sick-room.
Provision Shops	4	4	In 2 cases no precaution to prevent the spread of infection was being taken. In 1 case the family had access to sick-room.
Grocers' Shops	2	2	In 1 case the family had access to sick-room.
Small Shops	2	2	In 1 case there was no isolation or precaution taken.
Confectioners' Shops	2	3	In 1 case there was no isolation or precaution taken.
Hairdresser	1	6	
Butcher's Shop	1	1	
Hotel (Temperance)	1	1	
Tailoring	1	1	In this case there was no isolation or precaution taken.
Spirit Bar	1	1	
Dining Rooms	1	1	

The various households affected were supplied with milk by a large number of dealers. 29 dairies only supplied milk to more than one infected household, viz.:—

2 dairies supplied 5 households affected.					
4	„	„	4	„	„
6	„	„	3	„	„
17	„	„	2	„	„

In cases where more than one household had been supplied by milk from the same dairy, special inquiries were made from time to time. All the water supplied to the infected households is reported as being obtained direct from the mains of the Water Company.

For report on an *Outbreak of Enteric Fever in and near Prudhoe Street*, see Appendix B, page 64.

CONTINUED FEVER.

The undermentioned details refer to Continued Fever during the year 1887. Continued Fever.

Fresh cases—

In 58 households, single cases	...	...	...	...	...	...	58
„ 10 „ 2 cases each	...	...	...	...	...	...	20
„ 2 „ 3 „	...	...	...	...	...	...	6
							<hr/> 84
Cases in 2 Public Institutions (for particulars see Table, page 27)	...						2
Total	...	...	...	...	...	...	<hr/>86 <hr/>

Of the infected houses—

7, or about 10 per cent., consisted of 1 room each.

31	„	44	„	„	2 rooms	„
22	„	32	„	„	3 „	„
10	„	14	„	„	4 „	„ (or more).
<hr/> 70 <hr/>						

In relation to
Households, &c.

Of the sick-rooms in the 70 different houses infected, 46 are returned as being not at all isolated from the rest of the premises, the family either having access to, or living in, the sick-room. In 47 of the houses no means to prevent the spread of infection were being taken. In 6 cases removal to Hospital was agreed to and effected.

83 occupants of the infected houses were employed at shops, etc., or occupations elsewhere, as shown at page 29.

The following businesses were carried on on infected premises whereby infection was liable to be communicated to customers :—

Character of Infected Premises, etc.	No. of		Remarks made at date of Inquiry.
	House-holds.	Cases.	
Provision Shops	2	2	In 1 case there was no isolation, and in both cases no precautions were being taken to prevent spread of infection.
Greengrocer's Shop	1	1	
Dressmaker's	1	1	No precaution was being taken, and the family had access to sick-room.

SCARLET FEVER.

Scarlet Fever.

The undermentioned details refer to Scarlet Fever during the year 1887.

Fresh cases—

In 460 households, single cases ...	...	...	...	...	460
„ 132 „ 2 cases each ...	...	...	...	...	264
„ 49 „ 3 „ ...	...	...	...	...	147
„ 15 „ 4 „ ...	...	...	...	...	60
„ 10 „ 5 „ ...	...	...	...	...	50
„ 4 „ 6 „ ...	...	...	...	...	24
					<hr/> 1,005
Fresh cases in 3 Public Institutions (see Table, page 27)	...				203
Total ...					<hr/> 1,208 <hr/>

In relation to
Households, &c.

Of the infected houses—

87, or about 13 per cent., consisted of 1 room each.					
229	„	34	„	„	2 rooms „
137	„	20	„	„	3 „ „
217	„	33	„	„	4 „ „ (or more).
<hr/> 670					
<hr/>					

Of the sick-rooms in the 670 different houses infected no less than 338 are returned as being not at all isolated from the rest of the premises, the family either living in the sick-room or having direct access to it. In 349 of the houses no means to prevent infection were being taken. In 49 cases only was removal to Hospital agreed to and effected.

687 occupants of the houses in question were employed at shops, etc., or in occupations elsewhere, as shown at page 29.

The following businesses were carried on on infected premises whereby infection was liable to be communicated to customers :—

Character of Infected Premises, etc.	No. of		Remarks made at date of Inquiry.
	House-holds.	Cases.	
Butchers' Shops ...	2	2	
Public-houses and beer-houses ...	6	6	In 2 cases no precautions were being taken to prevent spread of infection, and in 1 case the family had access to the sick-room.
Washerwomen's Houses	2	2	In neither case was there isolation or precaution taken.
Provision Shops ...	2	5	
Picture Framers ...	1	2	
Small Shops (Confectionery, etc.) ...	8	12	In 4 cases there was no isolation, the families having access to sick-room, and in 4 cases no precautions were being taken.
Stationer's Shop...	1	1	
Day Schools ...	3	3	
Millinery and Dressmaking ...	4	6	In one case there was no isolation, and in 3 cases no precautions were being taken.
Milk Purveyors ...	3	8	In 1 case the family had access to sick-room.
Boot, Shoe, and Slipper-making ...	3	4	In 2 cases no precautions were being taken, and in 1 case there was no isolation.
Plumbers...	1	1	
Photographer ...	1	5	
Lodging-house ...	1	2	In this case no precaution was being taken.
Refreshment Rooms ...	1	1	
Drapers ...	2	5	
Dentist ...	1	2	
Pawnshop ...	1	2	

Scarlet Fever in relation to School Attendance.—Of the households infected with Scarlet Fever 541 contained scholars of one or other of 133 different schools in the city. In four of the largest elementary schools scholars came from upwards of 20 of such households during the year, the largest number attending any one school being 52. The school principals were cautioned.

In one school there was infection in the households of its scholars during every month of the year. In two others such infection occurred during 10 months, and in three others during 9 months.

D

Scarlet Fever in relation to School Attendance.

On twelve different occasions from 5 to 16 families of the scholars of individual schools were infected during the year, including one school so affected 4 times, one school affected 3 times, and two schools twice during the year.

Scarlet Fever in connection with a Dairy.

For report on *Outbreak of Scarlet Fever in connection with a Dairy at E—— W—— Farm*, see Appendix C., page 67.

Scarlet Fever in Newcastle Union Workhouse.

For report on *Outbreak of Scarlet Fever in the Newcastle Union Workhouse*, see Appendix D., page 67.

DIPHThERIA.

Diphtheria.

The undermentioned details refer to Diphtheria during the year 1887.
Fresh cases—

In 60 households, single cases	...	...	...	...	60
„ 7 „ 2 cases each	...	...	...	...	14
„ 2 „ 3 „	...	...	...	...	6
„ 2 „ 4 „	...	...	...	...	8
					<hr/> 88
Cases in two Public Institutions (for particulars see Table, page 27)	...	...	...	...	2
					<hr/>
Total	...	...	...	...	<hr/>90 <hr/>

In relation to Households, &c.

Of the infected houses—

6, or about 8 per cent. consisted of 1 room each.						
15	„	21	„	„	2	„
12	„	17	„	„	3	„
38	„	54	„	„	4	„ (or more).
<hr/>						
71						

Of the sick-rooms in the 71 different houses infected 26 are returned as being not all isolated from the rest of the premises, the family either having access to, or living in, the sick-room. In 29 of the houses no means to prevent infection were being taken. In 5 cases removal to Hospital was agreed to and effected.

75 occupants of the houses in question were employed at shops, etc., or in occupations elsewhere, as shewn on Table at page 29.

The following businesses were carried on on infected premises, whereby infection was liable to be communicated to customers :—

Character of Infected Premises, etc.	No. of		REMARKS.
	House-holds.	Cases.	
Public houses	2	2	In 1 case no precaution was being taken.
Dairy	1	1	
Chemist's Shop	1	1	

Milk Supply.—The households affected were supplied by a large number of dealers, and there is no reason to suppose that any outbreak was attributable to milk. 10 dairies only supplied milk to more than one infected household, viz. :—

1 dairy supplied	...	...	...	3 households.
9 dairies „	...	...	...	2 „ each.

PUERPERAL FEVER.

The undermentioned details refer to Puerperal Fever during the year 1887: Puerperal Fever

Inquiries were made in 9 households, containing	...	...	...	Cases. 9
Case in Public Institution, see page 27	...	...	...	1
Total	...	...	...	<u>10</u>

Four of the above cases had been attended by four different midwives, each of whom was cautioned against continuing her practice until the lapse of a period of two months after the confinement. This injunction is believed to have been attended to. Compensation for loss of practice was granted by the Sanitary Committee.

Puerperal Fever
and Midwifery
Practice.

The six remaining cases were attended by five different medical men. Of the two cases attended by the same practitioner one was notified by himself, the other by a visiting medical officer of the Dispensary.

INFECTIOUS CASES NOTIFIED IN PUBLIC INSTITUTIONS.

Institution.	Small-pox.	Typhus Fever.	Enteric Fever.	Scarlet Fever.	Diphtheria.	Continued Fever.	Puerperal Fever.	TOTAL.
Infirmary	1	2	3	13	1	1	...	21
Barracks ... ..	...	...	...	11	...	...	...	11
Fever Hospital, Newcastle ... ..	...	3	...	...	...	1	...	4
Workhouse ... ..	...	...	6	179*	...	...	...	185
Lying-in Hospital	...	...	...	...	...	...	1	1
Brandling Home ... ..	...	...	...	...	1	...	...	1
Total	1	5	9	203	2	2	1	223

Infectious
Diseases in Public
Institutions.

* Workhouse (see Report, Appendix D., page 67).

MEASLES.

Measles.

As stated in last Annual Report this disease, which is not notifiable under the Local Act, has become remarkably prevalent and fatal of late years.

Owing to the large number of deaths from this cause during the early part of 1887, the Sanitary Committee instructed the Medical Officer of Health to report on the reasons why the inclusion of Measles among the infectious diseases to be notified under the Act was in his opinion desirable.

In accordance with this the Report given in Appendix G. was submitted to the Committee and after due consideration was issued to the City Council.

In August a report recommending that Measles should be deemed an infectious disease under the Local Act, and that application be made to the Local Government Board for their approval thereto, was presented to the Council by Mr. Alderman Wilson the then Chairman. This report was considered by the Council on October 12th, and, after a somewhat prolonged discussion, was, by a majority of 19 to 17 votes, referred back to the Committee.

The deaths from Measles during 1887 were, as already stated, 211, of which 102 occurred in the second quarter of the year. The disease is said to have been exceedingly prevalent in Jesmond and the north part of the City generally.

ISOLATION AND OTHER PREVENTIVE MEASURES ADOPTED.

Isolation and
other Preventive
Measures in
Infected
Households.

The inquiry into this has been continued during the year with the following results :—

SUMMARY.—CHARACTER OF INFECTED HOUSES.

DISEASE.	DWELLINGS INVADED BY DISEASE.				
	HOUSEHOLDS.			Houses of more than 3 rooms.	Total House- holds.
	1 room each.	2 rooms each.	3 rooms each.		
Small-pox	1	3	1	1	6
Typhus	10	4	3	2	19
Enteric Fever	39	77	58	81	255
Continued Fever... ..	7	31	22	10	70
Scarlet Fever	87	229	137	217	670
Diphtheria	6	15	12	38	71
Totals	150	359	233	349	1,091
Rate per cent. to Total ...	14 %	33 %	21 %	32 %	...

**SUMMARY OF OCCUPATIONS IN WHICH PERSONS RESIDING ON INFECTED PREMISES
WERE ENGAGED ELSEWHERE AT THE TIME OF INQUIRY.**

Occupations (after the Classification in the Census Tables).	Small-pox.	Typhus.	Enteric Fever.	Simple Continued Fever.	Scarlet Fever.	Diphtheria	Puerperal Fever.	TOTALS.	Summary of Occupations followed else- where by Resi- dents on Infected Premises.
Government of the Country (Postal Officials, Police, etc.) ... ..	...	...	5	...	12	...	...	17	
Professional Classes, viz :—									
Schoolmasters and Teachers ... ..	...	...	2	...	5	...	...	7	
Medical, etc. ... ..	...	...	2	...	5	3	...	10	
Others ... ..	...	...	5	...	6	...	...	11	
Domestic Service	3	1	12	2	16	5	...	39	
Commercial Occupations (Travel- lers, Clerks, Agents, etc.) ... ..	...	...	23	4	55	14	...	96	
Conveyers of Men, Goods, or Mes- sages ... ..	...	3	37	12	72	5	...	129	
Occupations about Animals	1	...	...	1	1	1	...	4	
Workers and Dealers in Books, Prints, etc. ... ..	...	...	11	1	10	1	...	23	
Workers and Dealers in Machines and Implements ... ..	...	2	30	7	88	5	...	132	
Workers and Dealers in Houses, Furniture, and Decorations ... ..	...	...	24	6	67	5	1	103	
Workers and Dealers in Carriages and Harness ... ..	...	1	3	...	3	...	...	7	
Persons employed in Shipyards	1	1	17	10	35	2	...	66	
Workers and Dealers in Chemicals or Compounds ... ..	...	...	...	...	4	1	...	5	
Workers and Dealers in Tobacco ... ..	...	1	2	1	2	...	...	6	
Workers and Dealers in Food and Lodging (Publicans, Butchers, Provision Dealers, etc.) ... ..	...	2	26	8	44	8	...	88	
Workers and Dealers in Textile Fabrics (Drapers, etc.) ... ..	...	...	2	...	8	2	...	12	
Workers and Dealers in Dress	1	2	13	5	23	1	...	45	
Do. in Animal Substances (not Food, etc.)	1	...	2	1	6	...	...	10	
Workers and Dealers in Vegetable Substances (not Food) ... ..	...	...	1	2	3	...	...	6	
Workers and Dealers in Mineral Substances (Miners, Black- smiths, etc.) ... ..	...	...	22	7	37	7	...	73	
Workers and Dealers in Unspecified Commodities, viz :—									
Labourers	1	9	16	8	57	4	2	97	
Pawnbrokers ... ..	...	...	...	...	2	...	...	2	
Enginemen and Firemen (un- defined) ... ..	...	...	6	...	11	1	...	18	
Billposter ... ..	...	...	...	...	1	...	...	1	
Hawkers ... ..	...	...	4	...	1	...	...	5	
Managers, Foremen, etc. ... ..	...	...	4	...	11	1	...	16	
Machinists (undefined) ... ..	...	...	3	...	2	...	...	5	
Gardeners ... ..	...	...	...	...	3	1	...	4	
Workers and Dealers in Refuse Matters (Sweeps and Rag Dealers) ... ..	...	...	3	...	...	...	...	3	
Without Specific Occupation ... ..	...	...	1	1	3	...	...	5	
Occupation not stated	2	1	22	7	94	8	6	140	
Totals	10	23	298	83	687	75	9	1,185	
Totals of Inquiries made during the year at Infected Households	6	19	255	70	670	71	...	1,091	

Character of the Isolation and other Preventive Measures adopted.

Character of the Isolation and other Preventive Measures adopted.—
The following Table shews the character of the isolation observed and the extent to which other preventive measures were used by those on whose households infectious sickness was reported during the year :—

SUMMARY.—ISOLATION OF SICK-ROOMS AND PRECAUTIONS TAKEN, ETC.

DISEASE.	Total Households Infected	ISOLATIONS.				No Precautions being taken at time of Inspection.	Removal to Hospital agreed to. (Number of Patients.)	Percentage of Cases Isolated in Hospital to Total Notified.
		Well.	Moderate.	Imperfect.	None.			Per Cent.
Small-pox ...	6	...	1	...	5	4	6	86
Typhus ...	19	...	1	3	15	13	34*	92
Enteric Fever...	255	4	23	104	124	124	76	23
Continued Fever	70	...	1	23	46	47	6	7
Scarlet Fever...	670	17	74	239	340	352	49	4
Diphtheria ...	71	2	17	26	26	29	5	6
Total ...	1,091	23	117	395	556	569	176	...
Percentage ...	...	2 %	11 %	36 %	51 %	52 %	...	10.0

CORRESPONDING RETURN FOR THE YEAR 1886.

Total (1886)...	873	7	91	284	491	497	95	...
Percentage ...	...	0.8 %	10 %	33 %	56 %	57 %	...	7.1 %

Work at the Hospitals for Infectious Diseases.

FEVER AND SMALL-POX HOSPITALS.

184 patients have been admitted to the Fever and Small-pox Hospitals—

6 suffering from Small-pox.		
*34	„	Typhus.
76	„	Enteric Fever.
49	„	Scarlet Fever.
6	„	Simple Continued Fever.
5	„	Diphtheria.
1	„	Febricula.
7	„	Other diseases.

For other details as to the above, see Appendix A, Table XI.

The Small-pox Hospital has been open on three occasions, viz., April 7th to June 15th, August 10th to 23rd, and from November 10th to 28th. The Convalescent Home at Byker was in use for Fever cases, etc., from April 14th to July 21st.

* Two of these cases were admitted suffering from Enteric Fever and afterwards contracted Typhus.

Expense of Maintenance.

Of the patients admitted, the expense of maintenance is charged as under :—

Expense of Maintenance of Patients.

					Cases
To the Sanitary Authority	...	...	...	...	156
„ private guarantors	...	...	...	...	19
„ War Authorities (Barracks)	...	...	...	...	7
Total	...	...	...	...	182

BURIAL OF CORPSES.

Under the 47th Section of the “Newcastle-upon-Tyne Improvement Act, 1882,” Orders of Justice have been obtained during the past year as follow :—

Burial of Corpses under Local Act.

For Burial of Corpses from rooms in which persons live or sleep	...	...	...	13
For Burial of Corpses from Fever or Small-pox Hospital	...	...	...	3
For Removal of Corpses from Infirmary	...			3
Total	...	...	...	19

SUMMARY OF REPORTS MADE DURING 1887.

The following among other matters have been brought before the Sanitary Committee during the year :—

Summary of Reports, etc., made during the year.

1.—ZYMOTIC DISEASE—

Special Reports—

- Outbreak of Enteric Fever in Prudhoe Street (Appendix B).
- „ Measles.
- „ Scarlet Fever at E—— W—— Dairy Farm (Appendix C.)
- „ Scarlet Fever at the Newcastle-upon-Tyne Union Workhouse (Appendix D.)
- „ Typhus (Appendix F.)
- The working of the Compulsory Notification of Infectious Disease (Appendix E.)
- The Notification of Measles (Appendix G.)
- Fortnightly Returns of Notified Disease, Hospital Admissions, Deaths, numerous cases illustrating liability to spread of infection.
- Dairies and disease.
- Midwifery practice and Puerperal Fever.

Compensation granted to midwives and owners of infected provisions, etc., destroyed.

Infectious disease and schools.

Failure of a medical practitioner to make a correct notification of infectious disease.

Disinfection.

Cost of maintenance in Hospital: occupation of wards, etc.

2.—GENERAL MORTALITY—

Newcastle and other towns compared (1872-85).

Increased Death-rate (December).

3.—LOCALITIES—

Eddy's and Cellar's Entries, Sandgate.

Ridley Place.

Porters' Hill.

Wall Knoll.

Stepney Square.

East end of Newcastle (unpaved streets).

4.—DWELLINGS—

Overcrowding, defective dwellings, etc.

Tenement regulation.

Vacant Tenement Dwellings between Forth Banks and Gibson Street.

5.—TRADES, etc.—

Colliery and smoke nuisances.

6.—GENERAL—

Ouseburn pollution.

Sewage deodorization, etc., etc.

GENERAL WORK OF THE HEALTH DEPARTMENT.

General Work of
the Health
Department.
Nuisance
Removal.

(a.)—*Nuisance Removal*.—4,125 cases of nuisance have been attended to by the Inspectors of the Department during the year. (For details see Appendix A, Table XVI.)

Bakehouses.

(b.)—*The Bakehouses* (73) are reported by the Chief Inspector of Nuisances to be systematically inspected every six months, and at other times as to cleansing and limewashing. Seven have been closed during the year.

Triperies, etc.

(c.)—*The Triperies* (12), Marine stores (43), also the different Soap works, Candle works, Tanneries, etc., are reported by Mr. Clarke to be regularly attended to as to cleansing.

(*d.*)—*Infectious Disease Inquiry and Disinfection.*—1,763 cases of infectious disease have been inquired into by the Special Inspectors, and the houses or rooms connected therewith disinfected, as compared with 1,348 during the year before. The bedding and other infected articles have been removed to the Disinfecting Station, and after purification they have been returned to the owners. (For list see Appendix A, Tables XIV. and XV.) Disease Inquiry.

(*e.*)—*Compensation granted on account of Infection.*—In three cases compensation has been allowed by the Sanitary Committee to the occupiers of infected houses for provisions, fruit, etc., destroyed. Compensation.

(*f.*)—*Food Inspection.*—The report of Inspector Hedley on suspected and unwholesome *Butchers' Meat* or other flesh examined during the year, is given in Appendix A, Table XII. A Table of Fish inspected at the Fish Market in the Close is given in Appendix A, Table XIII. The amount of fish delivered at the Close Market, both by boat and rail, is less than in the previous year. Food Inspection.

(*g.*)—*Inspection of Dairies and Cow-sheds, etc., during 1887.*—During the year 1,825 inspections of cow-sheds and milk-shops have been made, and in 15 cases improvements have been effected in the lighting, ventilation, drainage, or cementing floors, etc., of cow-sheds on verbal notice being given. Dairies, &c.

One application has been made to the Sanitary Committee to begin to occupy an old building as a cow-shed. After being reported on, the application was declined.

Five outbreaks of infectious disease have been reported in the families of dairymen, viz., two of Scarlet Fever, two of Typhoid Fever, and one of Diphtheria. On receiving the report of the cases they were at once attended to by the Dairies Inspector, who gave instructions to stop all communication between the infected persons or premises and the milk supply. So far as is known no spread of infection has occurred from any of the cases.

(*h.*)—*Slaughter-houses.*—The inspection of slaughter-houses has been regularly attended to, those at the Cattle Market, Dispensary Lane, and Stepney having been visited once a week, or oftener, and the single ones scattered over the City in back lanes, etc., as often as time permits. At Stepney the water has been laid on to the interior of each slaughter-house, and the drains have been properly trapped. At the Cattle Market the slaughter-houses are still unsatisfactory owing to imperfect drainage and other defects.

One application was made to the Sanitary Committee to license an old building as a slaughter-house. After being reported on the Committee declined to grant the license.

Three licenses have been allowed to lapse, in one case the slaughter-house being converted into a tripery, and in two cases the premises being required for other purposes ; thus leaving 128 licensed places at the end of the year, of which 33 are licensed for six months only, as a protest against their unsatisfactory condition. In many of these, owing to structural defects, close confined situations, and proximity to dwelling-houses, little or no improvement can be made. Closing is the only remedy, a course which, unless preceded by the provision of proper abattoirs, would give rise to serious inconvenience.

HOUSES BUILT DURING THE YEAR 1887.

House-building
in 1887.

The following return of houses built during the year under report is supplied through the courtesy of the City Engineer :—

Newcastle-upon-Tyne				Houses. Self-contained.	Houses of Two Flats each.
Elswick Township	...	..	...	83	222
Westgate Township	...	...	...	—	5
Byker Township	...	...	...	4	119
Jesmond Township	...	...	...	57	—
Heaton Township	...	...	...	159	20
St. Andrew's Parish	...	...	...	19	2
St. John's Parish	...	...	...	2	3
St. Nicholas' Parish	...	...	...	—	—
All Saints' Parish	...	...	...	—	24
				324	395
(for 790 families.)					

New Accommo-
dation.

New accommodation has thus been provided for 1,114 families, or, at the rate of 5 persons to a family, 5,570 persons, as compared with accommodation estimated for 5,790 persons provided during 1886.

Plans Examined.

Plans submitted to the Town Improvement Committee* for 1,327 new dwellings (579 self-contained houses, 616 flats, and a block of artizans' dwellings for 132 families), together with 97 additions and 84 alterations to existing buildings, have been examined by the Medical Officer of Health.

* Several of these were rejected by the Committee, and others, for various reasons, have not been carried out.

The conveniences proposed for these dwellings were as under :—

Conveniences.

WATER-CLOSETS.		ASH-CLOSETS.	PRIVIES.
Indoor.	Outdoor.		
282	859	207	8

The following is a summary of the principal defects observed on the plans as first submitted :—

Defects on Plans for proposed Houses.

825 *small bedrooms* were noted. Twenty of the smallest of these yield an average capacity of less than 519 cubic feet. Of twenty of such bedrooms, the plans for which were examined on the same day, the average capacity was 735 cubic feet, and the average floor space 76·7 square feet.

Small Bedrooms.

219 other rooms, (kitchens, etc.,) were notified as “small.”

Other Defects on Plans.

325 bedrooms were without fireplace or special means of ventilation.

158 water-closets were in an improper position.

104 yards were deficient in space.

25 stables and 1 cow-house were objectionably near to dwellings.

1 water-closet was shewn in a bath-room.

12 proposed buildings interfered injuriously with light or ventilation of adjoining buildings.

8 instances of insufficient “convenience.”

57 “well” rooms.

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

Health Department,

Town Hall,

Newcastle-upon-Tyne,

April 1888.

City and County of Newcastle-upon-Tyne, 1887.

APPENDIX A.

TABLE I.—A.

POPULATION (ESTIMATED BY THE REGISTRAR GENERAL TO THE MIDDLE OF
THE YEAR)—157,048.

Registration Sub-districts and City.	Different Quarters of the Year.	Births Registered in 52 Weeks, ended 31st December, 1887.					Deaths Registered in 52 Weeks ended 31st Dec., 1887.		
		Male.		Female.		Total.	Male.	Female.	Total.
		Legiti- mate.	Illegi- timate.	Legi- timate.	Illegi- timate.				
Westgate ...	1st Quarter.	319	8	322	15	664	206	217	423
	2nd „ ...	353	14	335	12	714	204	162	366
	3rd „ ...	360	22	295	20	697	212	198	410
	4th „ ...	345	15	310	14	684	202	210	412
	Total ...	1,377	59	1,262	61	2,759	824	787	1,611
St. Andrew's	1st Quarter.	60	5	63	2	130	60	65	125
	2nd „ ...	57	2	65	3	127	40	46	86
	3rd „ ...	83	4	78	2	167	46	55	101
	4th „ ...	73	2	65	1	141	52	50	102
	Total ...	273	13	271	8	565	198	216	414
St. Nicholas'	1st Quarter.	32	3	35	2	72	65	53	118
	2nd „ ...	39	...	24	2	65	63	33	96
	3rd „ ...	28	1	32	3	64	58	36	94
	4th „ ...	33	4	31	...	68	71	58	129
	Total ...	132	8	122	7	269	257	180	437
All Saints' ...	1st Quarter.	105	3	121	3	232	57	73	130
	2nd „ ...	113	6	105	4	228	103	78	181
	3rd „ ...	100	9	102	7	218	67	77	144
	4th „ ...	102	2	130	5	239	72	75	147
	Total ...	420	20	458	19	917	299	303	602
Byker ...	1st Quarter.	180	10	190	6	386	92	119	211
	2nd „ ...	209	8	150	6	373	119	105	224
	3rd „ ...	191	8	210	4	413	108	116	224
	4th „ ...	245	10	182	4	441	110	120	230
	Total ...	825	36	732	20	1,613	429	460	889
City ...	1st Quarter.	696	29	731	28	1,484	480	527	1,007
	2nd „ ...	771	30	679	27	1,507	529	424	953
	3rd „ ...	762	44	717	36	1,559	491	482	973
	4th „ ...	798	33	718	24	1,573	507	513	1,020
	Totals ...	3,027	136	2,845	115	6,123	2,007	1,946	3,953

The Births represent a rate of 38·9, and the Deaths a rate of 25·2 per 1,000 estimated population. The increase of births over deaths is 2,170 this year, as compared with 2,665 in 1886. The increase of population at Midsummer, 1887, over that at Midsummer, 1886, is estimated by the Registrar General at 1,931 persons.

TABLE I.—B.

ANNUAL DEATH-RATE PER 1,000 POPULATION IN 28 LARGE TOWNS FOR
THE YEAR 1887.

FROM THE ANNUAL SUMMARY OF THE REGISTRAR GENERAL.

NAME OF TOWN.							Rate per 1,000.
London ...	...	...	...	...	...	...	19·6
Brighton	...	...	...	...	...	...	16·9
Portsmouth	...	...	...	...	...	...	19·5
Norwich	...	...	...	...	...	...	20·4
Plymouth	...	...	...	...	...	...	22·7
Bristol ...	...	...	...	...	...	...	20·4
Wolverhampton	...	...	...	...	...	...	21·7
Birmingham	...	...	...	...	...	...	19·7
Leicester	...	...	...	...	...	...	19·5
Nottingham	...	...	...	...	...	...	18·7
Derby ...	...	...	...	...	...	...	17·1
Birkenhead	...	...	...	...	...	...	21·0
Liverpool	...	...	...	...	...	...	23·7
Bolton ...	...	...	...	...	...	...	21·3
Manchester	...	...	...	...	...	...	28·7
Salford ...	...	...	...	...	...	...	22·2
Oldham	...	...	...	...	...	...	23·8
Blackburn	...	...	...	...	...	...	25·5
Preston ...	...	...	...	...	...	...	27·9
Huddersfield	...	...	...	...	...	...	23·0
Halifax ...	...	...	...	...	...	...	21·0
Bradford	...	...	...	...	...	...	19·9
Leeds ...	...	...	...	...	...	...	21·1
Sheffield	...	...	...	...	...	...	21·6
Hull ...	...	...	...	...	...	...	19·2
Sunderland	...	...	...	...	...	...	19·7
Newcastle	...	...	...	...	...	...	25·3
Cardiff ...	...	...	...	...	...	...	21·9

TABLE II.

ANNUAL DEATH-RATE PER 1,000 LIVING IN NEWCASTLE FOR EACH OF THE
PAST TWO YEARS, COMPARED WITH THE AVERAGE RATE IN THE LARGE
TOWNS OF THE UNITED KINGDOM.

	1886.		1887.	
	Annual Average in 28 Towns.	Annual Rate in New- castle.	Annual Average in 28 Towns.	Annual Rate in New- castle.
1st Quarter	24·4	23·0	22·0	25·6
2nd „	18·6	20·9	19·8	24·3
3rd „	20·4	21·6	20·4	24·8
4th „	20·3	23·0	21·1	26·0
Annual Rate	20·9	22·2	20·8	25·2

TABLE III.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	West-gate.	St. Andrew's.	* St. Nicholas'.	All Saints'.	Byker.	City.
I.—SPECIFIC, FEBRILE, OR ZYMOTIC DISEASES.						
1.— <i>Miasmatic Diseases.</i>						
Measles	55	16	8	67	65	211
Scarlet Fever (Scarlatina) ...	10	5	3	7	13	38
Diphtheria	9	1	2	2	17	31
Whooping-Cough	30	8	3	15	16	72
Typhus Fever ... ..	...	...	3	1	...	4
Enteric or Typhoid Fever ...	11	5	15	2	9	42
Simple Continued and Ill-defined Fever	2	...	2	1	...	5
Other Miasmatic Diseases ...	...	...	...	...	2	2
2.— <i>Diarrhœal Diseases.</i>						
Simple Cholera	2	...	...	...	...	2
Diarrhœa, Dysentery	54	8	4	19	30	115
5.— <i>Venereal Diseases.</i>						
Syphilis	8	5	3	8	2	26
6.— <i>Septic Diseases.</i>						
Erysipelas	12	...	2	2	3	19
Pyæmia, Septicæmia	2	...	3	1	...	6
Puerperal Fever	1	...	...	...	3	4
II.—PARASITIC DISEASES.						
Thrush	1	...	...	1	2	4
III.—DIETIC DISEASES.						
Starvation & Want of Breast Milk	4	...	...	...	...	4
Chronic Alcoholism, Delirium Tremens	7	4	3	3	2	19
IV.—CONSTITUTIONAL DISEASES.						
Rheumatic Fever and Rheumatism of the Heart	4	1	...	1	1	7
Rheumatism	3	1	...	1	3	8
Rickets	2	1	...	...	...	3
Cancer, Malignant Disease ...	26	12	17	11	11	77
Tabes Mesenterica	24	2	4	10	20	60
Tubercular Meningitis, Hydrocephalus	15	6	3	10	9	43
Phthisis	156	43	31	45	66	341
Carried forward	438	118	106	207	274	1143

* The number of Deaths in St. Nicholas' Sub-district is increased by 203 in the Infirmary, and 19 in the Fever Hospital, 97 of the former came to that Institution from beyond the City, and in 5 other cases residences were unknown.

TABLE III.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND
ENTIRE CITY DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	West- gate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.	City.
Brought forward	438	118	106	207	274	1143
IV.—CONSTITUTIONAL DISEASES — <i>Continued.</i>						
Other Tubercular and Scrofulous Diseases	31	5	11	8	9	64
Purpura, Hæmorrhagic Diathesis	1	1	...	...	...	2
Anæmia, Chlorosis, Leucocythæ- mia	2	...	1	...	1	4
Glycosuria, Diabetes Mellitus ...	3	1	2	...	2	8
Other Constitutional Diseases ...	...	...	1	...	...	1
V.—DEVELOPMENTAL DISEASES.						
Premature Birth	60	5	9	4	29	107
Atelectasis	4	1	...	...	...	5
Congenital Malformations ...	5	...	...	1	1	7
Old Age	114	26	1	17	22	180
VI.—LOCAL DISEASES.						
1.— <i>Diseases of Nervous System.</i>						
Inflammation of Brain or Mem- branes	28	12	6	18	33	97
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis ...	95	20	15	17	48	195
Insanity, General Paralysis of the Insane ... ..	...	...	...	1	2	3
Epilepsy	13	3	1	2	2	21
Convulsions	86	22	15	30	25	178
Paralysis Agitans, Paraplegia, Disease of Spinal Cord ...	3	2	1	...	1	7
Other Diseases of Nervous System	2	1	1	...	...	4
3.— <i>Diseases of Circulatory System.</i>						
Endocarditis, Valvular Diseases of Heart	13	4	2	...	5	24
Pericarditis ... ..	...	...	1	...	...	1
Other Diseases of Heart	78	13	32	33	59	215
Aneurism	1	...	5	...	...	6
Embolism, Thrombosis ... ..	...	...	...	1	2	3
Other Diseases of Blood Vessels...	2	...	1	...	...	3
4.— <i>Diseases of Respiratory System.</i>						
Croup	7	4	1	7	9	28
Laryngitis	3	1	1	1	3	9
Bronchitis	125	39	21	76	65	326
Pneumonia... ..	89	25	25	38	66	243
Pleurisy	8	1	3	2	1	15
Emphysema, Asthma	7	2	1	3	3	16
Other Diseases of Respiratory System	29	3	7	6	16	61
Carried forward	1247	309	270	472	678	2976

TABLE III.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND ENTIRE CITY DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	West-gate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.	City.
Brought forward	1247	309	270	472	678	2976
<i>5.—Diseases of Digestive System.</i>						
Dentition	19	1	2	4	9	35
Tonsillitis, etc.	2	...	1	...	1	4
Diseases of Stomach	20	4	3	4	4	35
Enteritis	2	1	1	2	4	10
Peritonitis	12	5	6	4	3	30
Obstructive Diseases of Intestine	6	1	3	1	3	14
Ascites	1	1	...	...	...	2
Cirrhosis of Liver... ..	16	5	4	3	8	36
Jaundice & other Diseases of Liver	17	1	4	3	8	33
Other Diseases of Digestive System	2	1	1	...	1	5
<i>8.—Diseases of Urinary System.</i>						
Nephritis	4	1	3	4	5	17
Bright's Disease, Albuminuria ...	14	6	11	5	9	45
Disease of Bladder and of Prostate	11	4	2	1	...	18
Other Diseases of Urinary System	8	3	13	4	1	29
<i>9.—Diseases of Re-Productive System.</i>						
(A) Of Organs of Generation.						
Male Organs ... ..	...	...	...	1	...	1
Female Organs	1	1	2	...	...	4
(B) Of Parturition.						
Puerperal Convulsions ... ..	...	1	...	...	2	3
Placenta Prævia, Flooding ... ..	...	1	...	...	1	2
Other Accidents of Childbirth ...	7	3	3	3	4	20
<i>10.—Diseases of Locomotive System</i>						
Caries, Necrosis	1	...	2	...	2	5
Arthritis, Ostitis, Periostitis ...	...	...	...	...	1	1
Other Diseases of Locomotive System ... ..	...	...	3	1	1	5
<i>11.—Diseases of Integumentary System.</i>						
(e.g., Carbuncle, Phlegmon, Cellulitis)	2	1	1	...	1	5
VII.—VIOLENCE.						
1.—Accident, Negligence, etc.						
Fracture and Contusion	13	3	28	3	3	50
Gunshot Wound	1	...	...	...	...	1
Burn and Scald	2	1	8	3	4	18
Poison	2	...	2	...	2	6
Drowning	4	...	2	4	2	12
Suffocation... ..	11	2	2	3	2	20
Hernia	3	...	2	...	2	7
Deaths consequent on Surgical Operation ... ..	...	1	2	...	...	3
Carried forward	1428	357	381	525	761	3452

TABLE III.—CONTINUED.

RETURN OF CAUSES OF DEATH IN THE REGISTRATION SUB-DISTRICTS AND
ENTIRE CITY DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS.					
	West- gate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.	City.
Brought forward	1428	357	381	525	761	3452
3.— <i>Suicide.</i>						
Cut, Stab	2	1	2	...	...	5
Poison	1	1	1	...	...	3
Drowning	2	...	...	...	2	4
Hanging	2	1	1	...	1	5
Otherwise ... ..	...	...	...	1	...	1
VIII.—DEATHS FROM ILL-DE- FINED AND NOT SPECIFIED CAUSES.						
Dropsy	2	...	1	...	4	7
Debility, Atrophy, Inanition ...	96	30	19	32	80	257
Mortification	1	2	1	...	2	6
Tumour	6	2	4	4	2	18
Abscess	8	3	2	3	1	17
Hoëmorrhage	3	...	...	...	...	3
Sudden Death (Cause not ascer- tained) ... ..	...	...	1	...	...	1
Found Dead (Cause not stated) ...	4	2	3	3	4	16
Other Causes not specified or ill- defined	56	15	21	34	32	158
TOTALS	1,611	414	437	602	889	3,953

TABLE IV.

THE FOLLOWING TABLE SHEWS THE WEEKLY NUMBERS OF DEATHS FROM CERTAIN DISEASES, LIABLE TO FLUCTUATION, DURING THE 52 WEEKS ENDED 31ST DECEMBER, 1887:—

1887.			Pulmonary Consumption.	Diseases of Respiratory Organs other than Consumption.	SEVEN CHIEF ZYMOTIC DISEASES.								Total of Seven Chief Zymotic Diseases.	
WEEK ENDED.					Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping- Cough.	Fever.				Diarrhoea.
										Typhus.	Enteric.	Continued.		
Jan.	8	...	9	19	...	15	3	...	2	...	1	...	...	21
"	15	...	7	22	...	6	1	...	1	...	2	...	1	11
"	22	...	6	22	...	4	...	...	...	...	...	...	...	4
"	29	...	5	14	...	3	1	...	...	...	1	...	1	6
Feb.	5	...	8	9	...	5	...	...	1	...	...	...	1	7
"	12	...	3	14	...	1	...	1	...	...	1	...	...	3
"	19	...	9	16	...	3	...	...	1	...	1	...	...	5
"	26	...	12	15	...	1	...	...	1	...	1	...	1	4
Mar.	5	...	8	25	...	3	...	1	1	...	1	...	...	6
"	12	...	2	15	...	5	2	1	...	...	...	...	...	8
"	19	...	8	22	...	4	...	...	...	...	...	1	2	7
"	26	...	7	8	...	4	1	...	...	...	...	...	1	6
April	2	...	12	8	...	8	...	...	1	...	1	...	1	11
"	9	...	7	11	...	6	1	...	...	...	1	...	...	8
"	16	...	8	15	...	3	1	1	1	1	1	...	1	9
"	23	...	5	9	...	11	...	...	4	...	...	1	1	17
"	30	...	7	9	...	3	...	...	5	...	1	...	4	13
May	7	...	5	11	...	4	1	1	2	...	...	...	1	9
"	14	...	7	9	...	12	...	...	3	...	1	1	...	17
"	21	...	11	12	...	10	1	...	5	...	...	...	2	18
"	28	...	6	8	...	9	...	...	4	1	...	...	1	15
June	4	...	8	14	...	9	1	...	2	2	...	...	...	14
"	11	...	7	17	...	8	1	...	...	...	2	...	1	12
"	18	...	12	10	...	3	...	1	...	...	2	...	1	7
"	25	...	5	7	...	12	3	3	...	...	2	...	1	21
July	2	...	7	7	...	12	1	1	2	...	1	...	4	21
"	9	...	7	12	...	8	...	...	1	...	1	...	2	12
"	16	...	6	7	...	13	1	2	...	...	...	...	4	20
"	23	...	5	11	...	2	1	...	6	...	2	...	5	16
"	30	...	4	5	...	3	1	...	3	...	...	...	7	14
Aug.	6	...	8	9	...	3	1	1	2	...	...	...	10	17
"	13	...	6	6	...	3	1	..	1	...	...	...	11	16
"	20	...	5	4	...	1	1	...	...	...	1	...	10	13
"	27	...	10	10	...	1	...	1	1	...	2	...	6	11
Sept.	3	...	10	8	...	1	1	3	1	...	3	...	7	16
"	10	...	9	9	...	1	1	...	2	...	1	...	6	11
"	17	...	6	8	...	1	1	...	...	...	1	...	4	7
"	24	...	5	5	...	...	...	1	2	...	1	1	4	9
Oct.	1	...	10	6	...	...	2	2	...	...	1	...	5	10
"	8	...	6	2	...	...	1	...	1	...	...	...	3	5
"	15	...	6	14	...	...	...	...	...	...	...	...	1	1
"	22	...	6	13	...	1	1	...	1	...	1	...	1	5
"	29	...	2	13	...	1	1	1	1	...	1	..	1	6
Nov.	5	...	3	28	...	...	1	...	...	...	2	...	2	5
"	12	...	2	18	...	...	...	...	...	...	1	...	1	2
"	19	...	5	21	...	1	...	1	...	...	...	...	...	2
"	26	...	4	27	...	...	1	...	1	...	1	...	...	3
Dec.	3	...	6	36	...	1	...	2	3	...	...	...	...	6
"	10	...	11	22	...	...	2	...	5	...	4	...	...	11
"	17	...	1	15	...	4	2	3	1	...	...	...	...	10
"	24	...	4	18	...	...	...	1	2	...	...	1	...	4
"	31	...	3	23	...	2	...	3	1	...	...	...	...	6
Totals ...			341	698	...	211	38	31	71	4	43	5	115	518

TABLE V.—AGES AT DEATH.

Periods.	REGISTRATION SUB-DISTRICTS.					
	Westgate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.	Total in City.
Under 1 Year	436	108	66	163	293	1,066
1 Year and under 5 Years...	231	51	42	150	173	647
5 Years „ 20 „ ...	122	25	41	41	79	308
20 „ „ 40 „ ...	208	66	114	73	99	560
40 „ „ 60 „ ...	233	72	120	87	106	618
60 „ „ 80 „ ...	317	75	49	77	122	640
80 „ and upwards ...	64	17	5	11	17	114
Total (all ages) dying during 52 weeks ended 31st Dec., 1887 ... }	1,611	414	437	602	889	3,953

TABLE VI.

BIRTHS AND DEATHS IN THE DIFFERENT QUARTERS OF THE YEARS
1886, 1887.

	BIRTHS.		DEATHS.	
	1886.	1887.	1886.	1887.
First Quarter	1,570	1,484	894	1,007
Second „	1,518	1,507	811	953
Third „	1,533	1,559	836	973
Fourth „	1,482	1,573	897	1,020
Totals	6,103	6,123	3,438	3,953

TABLE VII.

DEATHS OF CHILDREN UNDER 1 YEAR AND PERSONS OVER 60 YEARS
IN 1884, 1885, 1886, 1887.

	NUMBER OF DEATHS.							
	Under 1 Year of Age.				Over 60 Years.			
	1884.	1885.	1886.	1887.	1884.	1885.	1886.	1887.
First Quarter	220	228	215	252	158	178	191	194
Second „	169	301	206	220	151	179	140	184
Third „	317	277	299	313	158	152	123	161
Fourth „	243	201	231	281	184	156	186	215
Totals	949	1,007	951	1,066	651	665	640	754

TABLE VIII.

DEATHS OF CHILDREN UNDER ONE YEAR OF AGE DURING THE 52 WEEKS
ENDED DECEMBER 31ST, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	Total in City.	West- gate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.
I.—SPECIFIC, FEBRILE, OR ZYMOTIC DISEASES.						
1.— <i>Miasmatic Diseases.</i>						
Measles	51	11	7	2	12	19
Scarlet Fever (Scarlatina) ...	6	1	...	1	...	4
Diphtheria	2	2	...	...	...	...
Whooping-Cough	28	12	5	1	2	8
Other Miasmatic Diseases ...	1	...	...	...	...	1
2.— <i>Diarrhæal Diseases.</i>						
Simple Cholera	1	1	...	...	...	...
Diarrhœa, Dysentery	68	25	7	4	12	20
5.— <i>Venereal Diseases.</i>						
Syphilis	19	4	3	3	7	2
6.— <i>Septic Diseases.</i>						
Erysipelas	10	6	...	...	1	3
II.—PARASITIC DISEASES.						
Thrush	4	1	...	...	1	2
III.—DIETIC DISEASES.						
Starvation and Want of Breast Milk	4	4	...	...	...	...
IV.—CONSTITUTIONAL DISEASES.						
Rickets	2	2	...	...	...	...
Tabes Mesenterica... ..	32	11	1	3	6	11
Tubercular Meningitis, Hydro- cephalus	16	6	1	1	6	2
Phthisis	1	1	...	...	...	...
Other Tubercular and Scrofulous Diseases	14	10	...	1	1	2
Other Constitutional Diseases ...	1	...	...	1	...	...
V.—DEVELOPMENTAL DISEASES.						
Premature Birth	107	61	5	9	4	28
Atelectasis	5	4	1	...	...	...
Congenital Malformations ...	7	5	...	...	1	1
VI.—LOCAL DISEASES.						
1.— <i>Diseases of Nervous System.</i>						
Inflammation of Brain or Mem- branes	27	6	3	1	7	10
Epilepsy	1	1	...	...	...	...
Convulsions	140	64	16	12	26	22
3.— <i>Diseases of Circulatory System</i>						
Other Diseases of Blood Vessels...	1	1	...	...	...	...
4.— <i>Diseases of Respiratory System</i>						
Croup	2	...	1	...	...	1
Laryngitis	3	2	...	...	...	1
Bronchitis	107	41	15	6	23	22
Pneumonia	53	14	2	4	7	26
Pleurisy	1	...	1	...	...	...
Other Diseases of Respiratory System	9	4	1	...	...	4
Carried forward	723	300	69	49	116	189

TABLE VIII.—CONTINUED.

DEATHS OF CHILDREN UNDER ONE YEAR OF AGE DURING THE 52 WEEKS
ENDED DECEMBER 31ST, 1887.

CAUSE OF DEATH.	REGISTRATION SUB-DISTRICTS AND CITY.					
	Total in City.	West- gate.	St. Andrew's.	St. Nicholas'.	All Saints'.	Byker.
Brought forward	723	300	69	49	116	189
<i>5.—Diseases of Digestive System.</i>						
Dentition	18	12	1	...	...	5
Diseases of Stomach	13	6	3	1	2	1
Enteritis	6	...	2	...	1	3
Obstructive Diseases of Intestine	3	1	...	...	...	2
Jaundice and other Diseases of						
Liver	4	3	...	...	1	...
Other Diseases of Digestive System	1	...	...	...	...	1
<i>8.—Diseases of Urinary System.</i>						
Nephritis	1	1	...	...	...	...
Other Diseases of the Urinary						
System	1	1	...	...	...	...
VII.—VIOLENCE.						
<i>1.—Accident, Negligence, etc.</i>						
Suffocation... ..	20	11	2	2	3	2
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.						
Dropsy	2	...	...	...	...	2
Debility, Atrophy, Inanition ...	215	78	27	9	28	73
Abscess	3	2	...	1	...	...
Hæmorrhage	2	2	...	...	...	...
Found Dead (Cause not stated) ...	10	3	2	1	2	2
Other Causes not specified or						
ill-defined	44	16	2	3	10	13
Total	*1,066	436	108	66	163	293

* Representing a rate of 6·8 per 1,000 population at all ages.

TABLE IX.

UNCERTIFIED DEATHS IN EACH SUB-DISTRICT DURING THE 52 WEEKS ENDED
31ST DECEMBER, 1887.

ALLEGED CAUSE OF DEATH.	Westgate.			St. Andrew's.			St. Nicholas'.			All Saints'.			Byker			Total.		
	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.
Measles, Convulsions and Pneumonia	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1
The results of Measles	1	...	...	1	...
Diarrhoea	1	...	...	1
Consumption	*1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1
Premature Birth ...	14	...	...	1	...	...	3	...	...	...	...	...	1	...	...	19	...	...
Old Age	*1	...	...	...	...	...	*1
Inflammation of Brain	1	...	...	...	...	...	...	...	...	...	...	...	1
Apoplexy	*1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	*2
Convulsions ...	**** **8	...	...	5	...	...	4	...	...	6	...	...	3	...	...	*** **26	...	...
A Convulsion Fit	2	...	...	2	...	...
A Fit, the result of Measles	1	...	...	...	...	*1	...	...	...	...	...	...	*2	...
Heart Disease	4	...	...	4
Bronchitis, Convulsions, and Teething	*1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	*1	...
Congestion of the Lungs	1	...	...	...	...	...	...	...	...	1
Pneumonia and Convulsions	1	...	1	1	...	1
Dropsy, Convulsions..	1	...	...	1	...
Debility	2	...	...	1	...	1	4	...	...	4	...	1	11	...	2
Exhaustion(suddenly)	1	...	...	...	...	...	...	1	...	...	1	...	1
Exhaustion & Decay of Nature	**2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**2
Difficult Labour ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Suddenly, supposed effects of Measles	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Believed from Measles or some other Natural Cause	*1	*1	...	...	...	...	*1	*1	...
Carried forward ...	23	1	5	8	2	2	8	...	2	11	2	1	14	2	8	64	7	18

* The asterisks represent deaths registered on certificate from the Coroner

TABLE IX.—CONTINUED.

UNCERTIFIED DEATHS IN EACH SUB-DISTRICT DURING THE 52 WEEKS ENDED
31ST DECEMBER, 1887.

ALLEGED CAUSE OF DEATH.	Westgate.			St. Andrew's.			St. Nicholas'.			All Saints'.			Byker.			Total.		
	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.	Under 1 Year.	1 Year and Under 2.	2 Years and Above.
Brought forward...	23	1	5	8	2	2	8	...	2	11	2	1	14	2	8	64	7	18
Believed from Typhoid Fever or some other Natural Cause	*1	...	...	...	...	...	*1	...
Cancer of Uterus or some Natural Cause	1	...	...	1
Phthisis or other Natural Causes	1	...	...	1
Old Age or some other Natural Cause	*1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1
Epilepsy or some other Natural Cause	*1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1
Convulsions or some Natural Cause	***	**6	...	*1	4	...	****	*10	*1
Heart Disease or some other Natural Cause	*1	...	...	...	...	...	1*
Suddenly, supposed from Heart Disease	*1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	*2
Believed from Heart Disease and Dropsy	*1	...	...	...	...	...	*1
Some Natural Cause, probably Heart Disease	*1	...	...	2	...	...	...	...	...	*1	...	...	...	...	...	**4
Believed from Bronchitis or other Natural Cause	*1	...	...	...	...	...	*1	...	...
Bronchitis or other Natural Causes	*1	...	...	...	...	...	*1	...	...	...	...	...	1	...	...	**3
Brights' Disease or other Natural Causes	1	...	...	1
Believed from the Rupture of a Blood Vessel on the Lungs	1	...	...	*1	...	...	...	...	...	*2
Disease of Kidneys or other Natural Causes	1	...	...	1
Believed from Dropsy and Old Age or some other Natural Cause	*1	...	...	...	...	...	*1
Blood Poisoning or some other Natural Cause	*1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*1
Believed from Exhaustion & Bronchitis	*1	...	...	...	...	...	*1
Some Natural Cause	1	...	...	1
Total	23	1	11	8	2	5	8	...	4	18	3	8	18	2	14	75	8	42

* The asterisks represent deaths registered on certificate from the Coroner.

TABLE X.

ZYMOTIC DISEASES, A.D. 1887.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES, CORRECTED BY DISTRIBUTION OF THOSE OCCURRING IN THE FEVER AND SMALL-POX HOSPITALS TO THE STREET FROM WHICH EACH PATIENT WAS REMOVED.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.
Abinger street	2	...
Acorn road	2	...
Addison road	1	...	...	1	...
Addison street	1	...	...	2	1
Albert street	3	...
Albion row	3*	2	1	11	...
„ Day's buildings	1	...
„ Scott street	1	...	...	1	...
Alexander street	1	...	...	9	...
Alexandra place	1	...	...	1	...
Alexandra street	1	...
Alice place	1	...	...	...	...
Alma street	2	...	...	...	...
Ancrum street	1	...	...	...	...
Argyle place	2	...
Argyle street	2	...
Ashfield terrace west	2	...
Back lane	1	...
Ballast hills	1	...
Barrack road	1	...	...	...
„ (Barracks)	11*	...
Bath lane	3	...	1	...	2	...
Bath lane terrace	1	...	...	1	...
Bayley street	1	...	...	...	...
Beaconsfield street	2	...	...	6	...
Beamish street...	1
Beaumont street	2	...	...	4	...
Bell street	1	...	...	...	...
Bell terrace	1	...
Belvidere street	10	...
Bentinck crescent	5	...
Benton terrace...	1	...
Bermondsey street	2	1	...	5	...
Bishop's avenue	1	...
Blackett street...	*6**	...	...	...	...
Blagdon street	6	...
Blandford street	4*	...	...	13*	...
Blenheim street	1	...	1	1
„ (back)	1	...	...	...
Bolingbroke street	1	1	...	5	1
Bowman terrace (back)	2	...	1	...
Brandling place (Brandling home)	1*

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.
Brandling place west	1*	...	...
Brandling village	2*	...
Brighton grove	1*
Brinkburn street	1	...
Brunel terrace	7	1	...	2	...
Brunswick place	3	...	...	...	...
Bryson street	2	...
Bryson terrace	8	1	...	...	2	...
Buckingham street	5	4	...	1	...
Bulmer street	1	...	...	...	...
Burdon terrace	1	1*
Burnaby street	1	1
Burton street	1	...	...	...	...
Buxton street	1*	...	...	...	4	...
Byker bank	1	...	...	...	1	...
„ Brewery yard,
„ Foundry lane...	1	...
„ Byker buildings...	1	...
„ Engine street	1
„ Ford court	1	...
„ Wilkinson's court	1
Byker hill	1	...
„ Kidman's buildings	2	...
Byker street	1	...	...	4	...
Byron terrace (back)...	1	...	...	...	...
Camden street	1	...	...	2	...
Campbell street	2	...	3	...
Cannon street	1	...	...	...	...
Carliol square	5	...
Carliol street	2	...
Centre street	1	...	...	...	...
Cheviot view	1	...
Chimney mills	2	1
Church street	2	...
Churchill street	1	...
„ Churchill cottages	1	...
City road	1*	...	...	...	8	...
„ Albion yard	1	...	...	...	...	...
„ Eddy's entry	2	...	...	...	...
„ Egypt house	3	...
„ Scott's entry	3	...	...	...	1	...
„ Soaphouse lane	1*	...
Claremont place	1	...
Claremont road	1	...	...	1	...
Claremont street	3	...
Clarence place	1	...
Clarence street	3	...	...	1	...
Clasper street	1	...	...	1	...
Clayton park road	1	...
Clayton park square	1*	...	...	...	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.
Clayton street west	1	...
Clifford street	5	3	...	...	1*
Clive terrace	1	...
Cloth market, Drury lane	1
Clumber street...	1	...	8	...
Conyers road	1	...	7	...
Cook street	1*	8	...
Cookson street	1	...	1	...
Copland terrace	4*	...
Corbridge street	11*	1*
Corporation street	3	...
Cottenham street	2	...
Crescent place...	1	...
Crispin street (back A)	1	...	...	...	...
„ (back B)	1	...	...	...	...
Croft street	2	...
„ Croft court	1	...
Cromwell street	2	...	...	...	...
Crown street	1	...	...	6	...
Croydon road	1*	...	...	...	...
Cut bank	1	...
„ Gibb's yard...	2*	...
Dalton street	1	...	...	1	...
Day street	2	...
Dean street	4	...	...	5	...
De Grey street...	1	...
Denmark street	4*	...	...	6	...
Derby street	2*	...
Derwent place...	3	1
Diana street	3	...
Dilston road	1	...
Dispensary lane ...	1	...	1	...	...	2*	...
Douglass terrace	1	...	...	2	...
Duke street	1*
Dunn street	1	...	...	9	...
„ (back)	1	...
Dunn terrace, Byker bank	1	1	1	...	9*	...
Durham street...	1	...
East Heaton	5	...
East parade	1	1
Edgeware road...	1	...
Edward street	1	...	...	...	...
Eldon street	1	...	...	3	1
Ellison place (Saville row)	1	1
Elswick east terrace	1	1	...	...	...
„ (back)	2	...
„ Albert place	2	...
„ Dunn's cottages	1	...
„ Judson place	1	...
„ Mack's cottages	1	...	...	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.
Elswick place	1*	...	...	...	...
Elswick road	7	...
Elswick, Colliery yard	2	...
Elswick row	4*	...
Elswick street...	1*	...	...	1	...
" (back)	1	1	...	...	...
Elvet street	1	...	2	1
Elwick's lane	1	...	...	...	...
Enfield road	1	...
Eslington terrace	1	...	...	2	...
Essex street	3	...
Fairless street	3	...
Falconar street...	2*	...	...	4	...
Falmouth road	1*	...	...	...	...
Felton street	1	...	3*	...
Fenkle street	1	...	...	...	...
Fern avenue	1	...	...	...	...
Flora street	1	...	5*	2*
Forth banks (Infirmary)	1	2*	3**	1	...	13*	1
" Pitman's row	1*	...	...	4	...
" Wallis' yard	1	...
Forth street	1	...
" (back)	2	...
Franklin street	1	...	...	1	...
Friars	2	...	...	...
Friars' Green	1	...	...	...
Gainsborough grove	1	...	...	...	...
Gallowgate	4	...
" Factory yard	1	...
Garden street	1*
Garth heads, Indust. dwellings	1	...	...	2	...
George's road	8	...
George street	1	...	3	...
" (back)	2	1	...	3	...
Gibson street	1	...	...	9	...
Gladstone street	2	...
Gladstone terrace	3	...
Glasshouse street	3	1
Gloucester road	4	1*
Gloucester street	1*	...	...	1	...
Gluehouse lane	3	...
Glue terrace	5	...
Gosforth street...	1	...	...	3	...
Grace street	3	...
Grafton street	3	...
Grainger park road	4	...
Grainger street west	4*
Grenville street	1	1	2	...	...	...
Grey street	5*	2
Grosvenor place	1	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.
Hamilton street	2	...	...	11	...
Hamsterley road	1	...
Hanover street (back)	1	...	...	...	...
Hanover terrace, Cottage yard	1	...	...	...	...
Hare street	3	...
Harle street	1	...
Harrison place	1	...	...	2	2
Hartington street	1	...	...	...	...
Harvey street	10**	...
Hawes street	3	...
Hawthorn street	1	...	...	...
Hawthorn terrace	2	...
Headlam street	1	1	...	6	...
Heaton avenue	2	...
Heaton park road	3	...
Heaton road	2*	...	...	6	...
Hedley street	1	1	...	...	...
Hedley terrace	2	...
Henry street	4	...
Herbert street	1	2	...	5	...
High Friar street	7	...
Hill street	1	...	...	3	...
Hind st. back (Scotswood rd.)	1	...	...	...	...
Hotspur street	1	...	...	10	1
Howard street	2	1	...	...	2*	...
Hull street	1	...	...	...	...
Hume street	1	...	...	...	...
Hunter road	1	...	...	...	...
Ingham place	1	...	...	...	...
Janet street	1*	...	...	3*	*3**
Jefferson street	4	...	1	8	3*
Jesmond	2	...
Jesmond road (back)	3*	...
Jesmond vale, Fore street	1	...
„ Kirsop street	4	...
John street (back)	1	...	...	...	...
Kirk street	4	2*
Kyle street	1	1	...	...	...
Lambton place	1	...	...	...
„ Lambton court	1	...
Langhorn street	1	...	...	9*	...
Lawson street	1	...
Lawton street	1*	1	...	3	...
Leazes lane, Arthur square	1	...	...	...	...
„ Dyers yard	2*	...	...	...	...
Leazes terrace	1	2
Lefroy street	5	...	...	2	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.--CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.
Lily avenue	1	...
Lily crescent	6	...
Lime street	3	...
„ Pottery yard	1	...
Little Blagdon street	4	...
Liverpool street	1	...	...	1	...
„ Liverpool square	1	...	...	...	...	...
Loadman street	2	...
Long row, Spital Tongues	1*	...	...	...	...
„ (back), Byker	1	...
„ (front) „	1
Longley street	1*	...	...	...
Lord Milton street	1	...
Lord street	1	...	...	...	...
Lovaine crescent	1	...
Lovaine place	2
Lowrey street	3*	...	...	...	...
Maling street	2*	...
Malcolm street	8	...
Malvern street	3*	1
Mansfield street	1	...	...	...	...
Maple street	2*	...	...	1	...
Marlborough street (back)	1	...	...	...	...
Marsden street	4	...	...	8	...
Mather street	1	...
Matthew street	1	...	...	...	...
Mawson street	1	...	...	2	...
Melbourne street	1	...	...	1	...
Meldon street	3	...	...	2	...
Middle street	1	...
Mill lane	1	...	...	...	2	...
Mill street	1	...
Mitford street	2	...	...	7	...
„ Low Elswick quay	1	...	...	...	...
Molineux street	2	1	1	...
Monday street	1	1	1*
Monk street	2	...	1	1	...	...	...
Morley street (late Quarry st.)	5	5
Morpeth street	3	...	...	3	...
Mosley street	1	...
Mowbray street	6	...
Napier street	2	...	...	7	...
Nelson street	2	...
Nesham street	4	...
New Bridge street	1	...	1	...	...
Newgate street	2*	...
„ Hall's court	2	...
New mills	1	...
Noble street	1	...	1*	...	...	...	...

* The asterisks represent deaths and the numerals the total cases in each street

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.
Norfolk road	4	1*
North terrace	1	...	...	...	...
Northumberland street	1	1
„ Elswick court	2	...	...	...
„ Mackford's entry	2	...	...	3	...
„ Northumb'd place	2	...
North view	2*	...	...	1	...
Nun Street	1	...	...	1	...
Oak street	2	1	...	...	...	...
Oaks place	1	...
Orchard street, Slim's court	2	...	...	...	...
Ouseburn road...	1	...	...	...	...
Ouse street	2	1
Osborne avenue	4	...
Osborne road	1	...	...	6	...
Osborne terrace	1	...
Oxford street	2
Oxnam crescent	1	...
Oystershell lane	1	...	...	7	...
Panmure street	4	...
Park place	1	...	1	...
„ Grainger buildings	1	...	...	...	...
Park road	2*	...
Parker street	7	2*
Peel street	1	...	...	1	...
Penn street	1	...	...	...
Percy street	2	...	...	3	...
„ Lax's gardens	3	...
„ Patterson's court	1	...
„ Percy court	1	...	...	1*	...
„ Percy place	1	...	...	...	...
Picton terrace	1	...
„ (back)	1	...	...	...	...
Pilgrim street	1	...	...	2	1
„ Bell's court	1	...
„ Robin Hood yard	1	...	...	...	...
„ St. Andrew's court ...	1	...	1	...	...	2	...
Pine street	1	1	...	13	...
Pitt street	5	...	...	5	...
Plummer street	4*	...
Portland road	3*	...	...	5	1*
Portland street	1	...	...	...
Portland terrace	1	...
Pottery lane	1*
Potts street	1	...	...	...	1
Princess street...	1*	...	...	1	...
Prospect place	2	...
Prudhoe place, No. 1 court	1	...	...	...
„ No. 2 court	3**	2	...	...	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.
Prudhoe street	22*	1	...	2	...
„ Worthy's yard..	1	1	...	...	...
Back Prudhoe st., Smith's crt.	1	...	...	...
Quality row	1*	...	...	4	...
„ (back)	3	...
„ Pump lane	1	...
Quayside, Mercantile buildings	1	...
„ Cock's chare	1	...	...	1	...
Queen's lane, Vagrant ward...	1	...	...	...	...
Raby street	3	...	4	...
Railway street...	3*	...
„ Ferguson's court	1	...	...	...	...
Ramshaw street	1	...	3	...
Regent terrace	1	...	...	...	...
Rendel street	1*	3	...
Richmond street	4*	1	...	...	3	...
Ridley place	1	...
Ridley street	1*	...	...	...
Ridley villas	1	...
Ripponden street	1	...	1	...	1	...
River street	2	...
Robinson street	1	3*	...
Rosedale street	4	...
Rosedale terrace	2	...	...	...	...
Rothbury terrace	1	...
Ryehill	2	...
Ryehill terrace...	1	...	...	...	...
Salisbury street	6	1
Sandgate, Chapel lane No. 2	...	3	...	...	...	...	...
Sandyford court	4	...
Sandyford road	2	...
Scotswood road	2	...	...	12	2*
„ Back Boundary st.	1	1	...	2	...
Seaham street	2	...	...	...	...
Sheraton street	1	...	...	...	...
Shieldfield green	1	...
Shields road	11	...
Shield street	3	...	...	...	...
Shipley street	1	3	...	4	...
Shumac street	1	...	...	...
Shuttleworth street	4	...
Side	1	...
„ Hogg's entry	1	...
Silver st., Meeting House lane	1*
Simpson street	1	1*
Simpson terrace	1*	...	...	1	...
Skinners' burn road	1	...
South street	1	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.
Spital tongues	3	...
Spring street	1	...	...	4	...
St. Andrew's street	1*	...
St. Ann's row	1*
St. James' street	1
St. Lawrence road	1	...
" Pit row	2	1
St. Lawrence low road	1	1*
St. Lawrence square	1	...
Stone Cellars lane	1	...	...	...	...
St. Mary's place ...	1	...	...	...	...	...	...
St. Mary street, Anchor bank	2*	...	...	...
St. Nicholas' churchyard	1	...
St. Paul's terrace	3	...
St. Stephen's terrace	1	...	...	2*	...
St. Thomas' street	1	...
Stamfordham place	3	...	...	4	...
Stanhope street	4	...	...	6	1
Stanley street, Crossby terrace	5	...
" Walker road	*	...
Stanton street	5**	1	...	3	...
Stepney bank	2	...
Stepney lane	2	...	...	...	...
Stepney road	5	...
Stoddart street	1	...	...	3*	...
Stone street	1*	...	...	3*	...
Stowell square...	1	...
Stowell street	2	...
Strawberry place	1	...
Strickland street	6	...
Swan street	1	...	...	1	...
Swinburne place	1	...
Sycamore street	9*	1
" (back)	4*	...
Tamworth road	1	...	...	2	...
Temple street	2*	...	1	...
Terrace place	1	...	...	2	...
Teynham street	1	...
Thompson street	1	...	1*	1	...
Thornborough street	12	1
Thornton street	2	...	...	1	...
Trafalgar street	2	...	...	1	...
Tulloch street	1	...	...	...	...
Turner street	1	...	...	1	...
Tuthill stairs	1	...	...	...	...
Tweed street	2	...	...	1	...
Tyne street	1	...	...	...	...	...
Tynemouth road	4	2**
Tyneside terrace	1	1	...	...	...

* The asterisks represent deaths and the numerals the total cases in each street.

TABLE X.—CONTINUED.

STREET LIST OF CASES AND DEATHS FROM THE UNDERMENTIONED DISEASES.

LOCALITY.	* CASES AND DEATHS FROM						
	Small-pox.	Typhus Fever.	Enteric or Typhoid Fever.	Continued Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.
Union street	1	1	...	1	...
Union terrace south	1	...
Victoria place	1	...
Victoria square	2	...
Victoria terrace	1	...	...	6	...
Villa place	2	...
„ High Villa place	3*	..	...	1	...
Walker road	4**
Wallace street	1*	...	...	...	...
Waller street	1*	...	...	..	...
Warden street	1	...
Warkworth street	2	...	..	...
Warwick place...	1	...
Warwick street	1	...
Water street	*	...	1	...
Waterloo street	1
„ Waterloo place	1	...	...	...	...
Wellington street	2	1	...	1	...
Wentworth place	3	...
Wesley street	2	...	...	16	...
West parade	5	...
West street	1	...	...	2	...
Westgate road...	3	...	...	4	...
„ Workhouse	6*	...	...	179*	...
Westmorland lane	1	...	...	2	...
Westmorland road	1*	...	...	...	...
„ South parade...	1*
Wharnccliffe street	5	...
Wilfred street	1	...	...	3	...
Wilkie street	1	...	..	...	...
William street...	1	...	...	1	...
Windsor crescent	1	...
Windsor terrace	2	2
Wolsley road	1
Worley street	3	...	...	10	1*
Wylam road	5	...
Yorkshire street	3	...	...	3*	...
TOTAL	7	37	324	83	10	1,207	90

* The asterisks represent deaths and the numerals the total cases in each street.

N.B.—Among the cases notified under the Local Act as Continued Fever, three are certified as having died from Enteric Fever: one case notified as Enteric Fever is certified as having died from Continued Fever; one case notified as Scarlet Fever is certified as having died from Enteric Fever; and one case notified as Typhus Fever is certified as having died from Septicæmia, etc. The cause of death only of the first five cases named is recorded in the street list. In five other cases the cause of death only is recorded, owing to their being notified towards the close of 1886.

TABLE XI.

ADMISSIONS TO AND DEATHS AT THE FEVER AND SMALL-POX HOSPITALS
FROM 1ST JANUARY TO 31ST DECEMBER, 1887.

DISEASES.	ADMISSIONS.													DEATHS.									
	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Jan.	Feb.	April	May.	June.	July.	Aug.	Sept.	Oct.	Total
Small-pox ...	...	...	...	2	2	...	...	1	...	...	1	...	6	...	...	...	...	...	...	...	...	...	...
Scarlet Fever ...	7	2	4	2	5	4	6	4	5	7	2	1	49	1	...	...	...	...	...	...	...	1	2
Typhus Fever ...	...	...	1	17	12	4	...	...	...	...	...	...	34*	...	...	1	1	1	...	...	...	...	3
Enteric Fever ...	1	2	...	6	15	7	4	13	9	5	8	6	76	...	1	1	1	3	2	2	...	1	11
Continued Fever ...	...	...	2	...	2	...	...	2	...	...	...	...	6	...	...	1	1	...	...	...	...	...	2
Diphtheria ...	2	...	...	...	...	...	...	1	...	...	2	...	5	...	...	...	...	...	...	1	...	1	...
Febricula ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
Other Diseases, } not Febrile }	...	...	1	1	...	2	2	...	...	...	1	...	7	...	...	...	...	...	...	...	...	...	...
TOTAL	10	4	8	28	36	17	12	21	14	12	15	7	184	1	1	3	3	4	2	2	1	2	19

* Two of these cases were admitted suffering from Enteric Fever and afterwards contracted Typhus.

TABLE XII.

RETURN OF SUSPECTED AND UNWHOLESOME PROVISIONS INSPECTED DURING
THE YEAR 1887.

PROVISIONS INSPECTED.	Amount of Suspected Provisions Inspected.	CONDITION.		BAD—HOW DISPOSED OF.	
		Fit for Food.	Unfit for Food.	Destroyed by Order of Justice.	Destroyed with Owner's Consent.
Carcases of Beef...	97	58	39	1	38
Quarters of Beef...	7	...	7	...	7
Carcases of Veal...	13	5	8	...	8
„ Mutton	170	87	83	...	83
„ Pork...	134	90	44	...	44
Turkeys ...	22	...	22	...	22
Geese ...	30	19	11	...	11
Hares ...	64	...	64	...	64

Of the carcasses of beef returned as fit for food, 15 of the animals had been bruised during transit. The bruised parts were cut off and destroyed. A number of carcasses of mutton and pork were dealt with in a similar manner.

One person has been proceeded against for being the owner of diseased meat intended for human food. He was fined £5 and costs.

(Signed) WM. HEDLEY, INSPECTOR.

Health Department, Town Hall,
March, 1888.

TABLE XIII.

RETURN OF FISH RECEIVED IN NEWCASTLE FISH MARKET, CLOSE, FROM
3RD JANUARY TO 31ST DECEMBER, 1887.

DESCRIPTION.	DELIVERED BY BOAT.						DELIVERED BY RAIL.					
	Baskets.	Barrels.	Boxes.	Kits.	Bags.	Fish.	Baskets.	Barrels.	Boxes.	Kits.	Bags.	Fish.
Conger ...	...	...	...	...	...	...	2	1	...	...	...	...
Cod ...	19	830	...	...	...	...	...	304	...	...	...	...
Gurnet ...	1	...	...	...	...	...	1	...	...	...	...	...
Haddock ...	2,063	75	...	...	...	...	437	430	...	...	...	...
Herring ...	42	9,567	22	...	...	...	70	1,213	...	...	...	...
Ling ...	3	520	...	...	...	...	7	2,201	...	...	...	...
Mackerel ...	...	...	...	...	...	...	...	...	1,419	...	...	...
Salmon ...	...	...	2	...	...	...	...	...	90	...	...	...
Trout ...	...	...	...	...	...	...	...	...	...	...	...	...
Black Jack...	43	38	...	...	...	...	...	25	...	...	...	...
Whiting ...	148	...	...	...	...	...	2	...	...	...	...	...
Hake ...	...	...	...	...	...	15	...	...	...	...	...	...
Halibut ...	45	48	9	...	...	...	11	84	23	...	...	...
Plaice ...	147	254	...	7	...	...	33	42	...	13	...	...
Skate ...	122	34	...	...	...	...	...	312	...	...	...	...
Soles ...	26	...	...	...	...	...	1	...	...	...	...	...
Turbot ...	...	...	...	...	...	76	...	...	...	...	...	...
Cat-fish ...	...	...	...	...	...	53	...	...	...	...	...	53
Monk-fish ...	83	20	...	...	...	...	4	1	...	...	...	...
Cockles ...	...	...	...	...	...	...	...	...	...	...	4	...
Mussels ...	...	...	...	...	...	...	...	...	...	...	705	...
Crabs ...	...	10	...	...	...	...	...	184	...	...	...	...
Lobsters ...	...	...	...	...	...	...	...	...	...	...	...	...
Crayfish ...	36	...	...	...	...	...	...	...	...	...	...	...
Whelks ...	...	...	...	...	...	...	...	...	...	...	2	...
Winkles ...	...	...	...	...	...	...	...	221	...	...	...	...
Shrimps ...	...	...	...	...	...	...	15	...	...	...	...	...
Prawns ...	91	...	...	...	...	...	...	...	...	...	...	...
Findon Had-	...	...	...	...	...	...	...	221	4,404	...	...	...
docks ...	...	...	...	...	...	...	...	...	9,302	...	...	...
Kippers ...	...	...	...	...	...	...	2,899	181	5,882	...	...	...
Bloaters ...	...	...	...	...	...	...	...	311	...	...	...	...
Sprats ...	...	17	...	...	...	...	...	38	...	...	...	...
Oysters ...	...	3	...	...	...	...	...	...	...	...	...	...
Totals in 1887	2,869	11,416	33	7	...	144	3,482	5,769	21,120	13	711	53
Totals in pre- vious year...	6,085	14,286	42	...	...	384	1,590	6,524	22,967	3	616	10

(Signed) WILLIAM T. CLARKE,
CHIEF INSPECTOR OF NUISANCES, AND INSPECTOR OF FISH.

TABLE XIV.

INFECTED ARTICLES DESTROYED AND REPLACED BY THE HEALTH
DEPARTMENT DURING THE YEAR 1887.

101 Straw Mattresses. 1 Flock Mattress. 12 Straw Beds. 1 „ Bolster.	12 Bed Ticks. 9 Flock Beds. 2 „ Pillows.
INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS.	
FROM THE CITY.	FROM THE FEVER HOSPITAL.
325 Feather Beds. 325 Flock „ 826 Mattresses. 1,362 Pillows. 558 Bolsters. 679 Blankets. 546 Rugs. 119 Counterpanes. 84 Bed and Window Curtains. 139 Cushions. 95 Hearth Rugs and Door Mats. 119 Carpets. 263 Books. 870 Articles of Wearing Apparel. 470 Miscellaneous Articles.	53 Beds. 26 Mattresses. 47 Pillows. 140 Blankets. 9 Counterpanes. 1,119 Articles of Wearing Apparel. 2 Boxes of Nurses' and Servants' Clothing 200 Books.

TABLE XV.

SUMMARY OF CASES DISINFECTED BY THE HEALTH DEPARTMENT DURING
THE YEAR ENDED 31ST DECEMBER, 1887.

PARISH OR TOWNSHIP.	NATURE OF DISEASE.							
	Small- pox.	Scarlet Fever.	Diph- theria.	Typhus Fever.	Enteric or Typhoid Fever.	Con- tinued Fever.	Puer- peral Fever.	TOTAL.
Elswick	1	451	8	3	72	20	1	556
Westgate ... ..	...	133	11	...	66	18	2	230
St. Andrew's	2	101	12	1	70	12	...	198
St. John's	4	31	6	3	8	6	...	58
St. Nicholas' ... ..	...	17	3	2	9	...	...	31
All Saints' ... ..	...	151	9	18	48	6	1	233
Jesmond ... ..	...	45	4	...	4	...	1	54
Byker (including Heaton)	...	279	37	10	48	24	5	403
Total	7	1,208	90	37	325	86	10	1,763
Total Infected Households disinfected during the year								1,091

In addition to the above 39 inquiries have been made, and disinfection done at houses or rooms where deaths have occurred from Measles or Diarrhœa.

TABLE XVI.—NUISANCE REMOVAL.
SUMMARY OF NOTICES SERVED FOR NUISANCES DURING THE YEAR ENDED 31ST DECEMBER, 1887.

NATURE OF OFFENCE, OR REMEDY REQUIRED.	No. 1 DISTRICT.			No. 2 DISTRICT.			No. 3 DISTRICT.			No. 4 DISTRICT.			TOTAL.		
	Informal*.	Formal.	Total.	Informal.	Formal.	Total.	Informal.	Formal.	Total.	Informal.	Formal.	Total.	Informal.	Formal.	Total.
Rooms ordered to be closed, as being unfit for human habitation ...	1	24	25	...	3	3	...	10	10	...	4	4	1	41	42
Rooms cleaned and repaired ...	5	4	9	4	12	16	2	6	8	...	17	17	11	39	50
Overcrowding ...	1	6	7	...	16	16	...	16	16	...	4	4	1	42	43
Dilapidated yards and passages	6	130	136	25	58	83	7	32	39	2	45	47	40	265	305
Dirty yards, passages, staircases, etc.	76	330	406	6	100	106	4	132	136	1	81	82	87	643	730
Defective & badly-constructed drains & sinks, bath, lavatory, & cistern wastes connected to soil-pipes or drain ...	99	239	338	90	170	260	61	225	286	1	85	86	251	719	970
Water-closets choked and defective ...	42	172	214	28	152	180	39	133	172	1	19	20	110	476	586
New water-closets ...	3	66	69	2	44	46	1	57	58	...	4	4	6	171	177
Defective soil-pipes ...	6	...	6	14	8	22	18	17	35	1	...	1	39	25	64
Defective ash-closets ...	...	23	23	2	48	50	2	99	101	1	36	37	5	206	211
New ash-closets ...	...	...	...	...	2	2	...	3	3	...	2	2	...	7	7
Privies and ashpits defective ...	4	73	77	25	44	69	3	41	44	1	117	118	33	275	308
New privies and ashpits ...	...	...	...	...	1	1	...	1	1	...	...	...	...	2	2
New tubs for ashes ...	8	91	99	2	12	14	7	28	35	...	23	23	17	154	171
Offensive accumulations, etc. ...	7	21	28	15	20	35	3	29	32	1	13	14	26	83	109
Swine and other animals kept	4	4	8	2	14	16	1	8	9	...	17	17	7	43	50
Defective water-spouts, causing damp in rooms ...	9	29	38	5	12	17	6	26	32	...	10	10	20	77	97
Water supply ...	11	37	48	18	21	39	6	29	35	1	26	27	36	113	149
Smoke nuisance ...	5	...	5	9	1	10	5	1	6	...	...	...	19	2	21
Other nuisances ...	3	3	6	6	3	9	10	4	14	...	4	4	19	14	33
TOTAL	90	1,252	1,542	253	741	994	175	897	1,072	10	507	517	728	3,397	4,125

* By "Informal Notice" is to be understood any communication made verbally or by letter. "Formal Notices" are those served under the Statutes.

During the past year 730 connections have been made with the common sewers. The works having been begun before the case was heard, the summons was withdrawn on defendant paying costs. One summons was taken out during the year, and the case heard by the justices. WILLIAM T. CLARKE, Chief Inspector of Nuisances. (Signed)

TABLE XVII.

1887.—RAINFALL, MEAN TEMPERATURE, ETC.*

1ST QUARTER.			2ND QUARTER.			3RD QUARTER.			4TH QUARTER.		
Week ended	Rainfall. Inches.	Mean Temp. Deg. Fahr.	Week ended	Rainfall. Inches.	Mean Temp. Deg. Fahr.	Week ended	Rainfall. Inches.	Mean Temp. Deg. Fahr.	Week ended	Rainfall. Inches.	Mean Temp. Deg. Fahr.
Jan. 8...	0.54	32.0	Apr. 9...	0.17	41.6	July 9...	0.28	61.5	Oct. 8...	0.24	49.5
„ 15...	0.94	33.6	„ 16...	0.13	40.5	„ 16...	0.36	65.1	„ 15...	1.40	41.8
„ 22...	0.35	39.5	„ 23...	0.30	48.3	„ 23...	0.00	60.1	„ 22...	0.02	45.3
„ 29...	0.00	44.0	„ 30...	0.24	43.5	„ 30...	0.20	61.6	„ 29...	0.20	43.2
Feb. 5...	0.19	44.8	May 7...	0.21	44.1	Aug. 6...	0.16	59.6	Nov. 5...	0.56	44.6
„ 12...	0.03	33.3	„ 14...	0.19	48.4	„ 13...	0.56	58.0	„ 12...	1.36	45.8
„ 19...	0.20	40.8	„ 21...	0.63	47.8	„ 20...	0.75	54.5	„ 19...	0.53	35.6
„ 26...	0.02	46.1	„ 28...	0.54	47.1	„ 27...	0.19	60.6	„ 26...	0.39	40.8
Mar. 5...	0.00	41.8	June 4...	0.22	48.1	Sept. 3...	1.01	59.5	Dec. 3...	0.10	43.3
„ 12...	0.60	37.5	„ 11...	0.03	58.0	„ 10...	2.29	53.5	„ 10...	0.58	37.0
„ 19...	0.20	31.5	„ 18...	0.03	63.6	„ 17...	1.60	51.6	„ 17...	0.52	38.3
„ 26...	0.49	39.6	„ 25...	0.00	53.4	„ 24...	0.00	51.1	„ 24...	0.96	34.6
April 2...	0.19	44.8	July 2...	0.00	64.1	Oct. 1...	0.71	47.5	„ 31...	0.51	35.7
TOTAL...	3.75	Mean. 39.18	TOTAL...	2.69	Mean. 49.88	TOTAL...	8.11	Mean. 57.24	TOTAL...	7.37	Mean. 41.19

Total Rainfall during the Year 1887 = 21.92 inches.

Mean Temperature during the Year 1887 = 46.87 deg. Fahr.

* Supplied by the courtesy of Mr. William Lyall, Librarian, Literary and Philosophical Society.

APPENDIX B.

ENTERIC FEVER IN AND NEAR PRUDHOE STREET.

(Extract from Report of the Medical Officer of Health to the Sanitary Committee for the fortnight ended 22nd October, 1887.)

During the months of August and September last a small outbreak of Enteric Fever took place in and near Prudhoe Street, the extent of which is stated in the following details:—

Area.—The cases of Fever occurred on two sides of Prudhoe Street, and the courts and lanes immediately adjoining, including Prudhoe Place, No. 1 and No. 2 Courts, and Park Place. There was also one case at No. 4, Percy Place, the back door of which opens to Park Place.

Time.—The first case was notified on 12th August, and the last on 29th September.

Number of Cases.—The cases include 18 notified as Enteric, and 8 notified as “Continued” Fever—a total of 26, in 20 different households. Four of the members of one household, and three of another were affected with Fever. Two of the cases died. 6 were reported in August and 20 in September. The locality of each case in the outbreak is shewn on the Plan submitted herewith.* 14 cases occurred in Prudhoe Street proper (4 on the south side and 10 on the north), 2 in Worthy’s Yard, 1 in Smith’s Court, 1 in Park Place, 1 in Percy Place, 1 in No. 1 Court, and 6 in No. 2 Court, Prudhoe Place.

13 of the cases were under private medical treatment, and 13 were patients of the Dispensary, etc.

Children from 5 infected households were scholars at the Prudhoe Street Mission Schools.

2 only of the 26 cases consented to be, and were, removed to Hospital.

Inquiry.—In addition to the usual investigation made at the houses of all cases of infectious disease notified in the City, a special inquiry was made into the conditions which might have originated or spread the disease in the area in question. Among these may be named—

(a) *Water Supply.*—This was in all cases that of the Water Company, which is distributed alike to infected and non-infected households in the area and beyond it. There is no reason to attribute the disease to this source.

(b) *Milk Supply.*—Of the 20 households infected 16 used milk and 4 did not. Of these using milk, 4 got it from as many different suppliers, two other milk dealers supplied 3 households each, and a third supplied 6 households. The latter dealer obtained her supply from a dairy farm in the country (Mr. Hunter’s, Blakelaw), about which the Medical Officer of Health for the Ponteland District (Dr. Fitzgerald) reports satisfactorily.

* Given with the original Report.

The fact that six customers of one milk business were infected was *primâ facie*, somewhat suspicious, but was evidently due to the circumstance of the shop being in the centre of the infected area, and, therefore, naturally drawing most of its customers therefrom. A list of 21 regular customers of this business was, on request, furnished to the Health Department, which, on comparison with the notification returns, shewed that 16 families consuming the milk remained free from infection, one of the six infected households not being a regular customer. In like manner, milk lists supplied by the dairies having each three infected customers, shewed that in the one instance, of 28 regular customers all had remained uninfected, the infected families being only occasional purchasers of this milk; and in the other instance, out of 26 customers, 3 only caught fever.

General Sanitary State of the Area.—The infected area is densely populated. The ventilation of the courts behind Prudhoe Street is defective. *No. 2 Court, Prudhoe Place*, (in which there have been 6 cases of fever with one death) is especially to be noted, partly on this account, and also because the general air supply, always somewhat stagnant, is contaminated to a serious extent by the effluvia from an old crowded cowbyre, with its offensive midden. The fact that several sewer ventilators open into and round this close court does not improve matters. It also explains how the contagium, discharged into the water-closets of infected houses higher up the sewer, has probably found its way into the lungs or digestive apparatus of the infected occupants of the court.

At *No. —, Percy Place*, one of the infected houses, is an open privy and ashpit at the back 9 feet from the window of a room. Within 30 feet of the door (at an angle in Park Place) are two sewer ventilators.

Other sanitary defects of the district noted at the inquiry are stated below :—*

No. —, Prudhoe Street.—Insufficient supply of water to W.C.
The Foot of Lambton Place.—Unpaved and dirty.

Lambton Court.—Foul privies and ashpit. Notices have been served to construct ash-closets.

No. —, Park Place.—A foul defective W.C. in basement; sink on stairs connected with drain. There is no place for a W.C. outside the house, and no gulley over which the sink can be made to discharge. Notice has been served for temporary remedy, but the want of a yard has prevented the Health Department from taking action to secure a W.C., etc., outside of the house.

Porter's Court.—5 foul privies and ashpit for 38 tenants. Defective paving of yard. The privies are being replaced by W.Cs., and the yard is to be cemented.

No. —, Prudhoe Place.—Deficient closet accommodation (1 W.C. for 14 tenants.) A plan is being prepared for an additional closet.

Nos. — and —, Lambton Place.—Deficient closet accommodation (1 W.C. for 11 tenants). Notice has been served to provide additional accommodation, but, as at —, Park Place (already

* Since the date of the Report several of the defects named have been remedied.—H.E.A.

referred to), which belongs to the same owner, there is a difficulty in finding space on which to erect additional closets.

Smith's Court.—2 W.Cs. for 24 tenants. These abut on an occupied room in Park Place. They were found clean and in working order. Here, also, there is a difficulty in finding suitable space for additional conveniences.

Nos. — to —, Prudhoe Street.—Defective closet accommodation (1 W.C. only for 14 tenants). An additional closet has since been put in on notice, and the yard has been cemented.

The position of the old sewer from Prudhoe Street to the foot of Lambton Place, together with the alteration made to it by the City Engineer, have recently been described verbally to the Committee.

CAUSE OF THE OUTBREAK.—The origin of a limited outbreak of Enteric Fever in a large and populous district is frequently difficult to trace. In the present instance the infection does not appear to have been introduced or spread by the more common media of water or milk. The vehicle next in order by which such infection is liable to spread from one person to another is that of the air, under circumstances of stagnation and general or specific contamination. That these circumstances exist in and near Prudhoe Street has been proved. That they acted as the direct means of propagating the disease is highly probable.

ACTION TAKEN :—

1. The removal to hospital of such cases *as were willing to go*.
2. The disinfection of premises and articles.
3. Structural alterations, and notices served as before stated.
4. The flushing of the sewers under direction of the City Engineer.

Granted that the spread of infection in this instance has been due, as is believed, to aerial transmission through the sewers or otherwise, the compulsory removal to hospital of the first case at its commencement would have prevented the outbreak. But the Corporation has not this compulsory power, and so long as this negative state of things continues there may be at any time, and there doubtless will be from time to time, a repetition—perhaps on a more tragic scale—of the drama that has just been played in and round Prudhoe Street.

(Signed) HENRY E. ARMSTRONG,
Medical Officer of Health.

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
7th November, 1887.*

ADDENDUM.

The district under report is triangular in form and about $2\frac{3}{4}$ acres in area, and at the House-to-House Inspection in 1884 was populated at the rate of 495 persons per acre.

One only of the infected houses was crowded beyond 300 cubic feet per person. This will be attended to in due time.—H. E. A.

APPENDIX C.

(Extract from Report of Medical Officer of Health for fortnight ended 22nd October, 1887.)

OUTBREAK OF SCARLET FEVER IN CONNECTION WITH A DAIRY.

As stated in last fortnightly report, three cases of Scarlet Fever have recently occurred at the Dairy of Mrs. N——, E—— W—— Farm. The first case on the Dairy premises appears to have been Mrs. N—— herself, who stated that she first felt unwell on September 28th with what she thought was a bilious attack, but which has been notified as Scarlet Fever.

At the time of Mrs. N——'s taking ill, Scarlet Fever was notified in the family of one of her dairy customers, and since that date no less than 12 others of these families, out of a total of 28 customers in the city, have been reported as having the disease.

The milk business is reported to have been disconnected from the house immediately on the disease being recognised, and to have since been kept separated entirely from it. It is said to be carried on entirely by a boy and girl who live away from the premises. The milk vessels are kept in the cow-house, where there are also appliances for cleansing them. The Dairies' Inspector has been instructed to keep the place under surveillance. The proprietor has been strongly cautioned.

Several of the drains at the farm are untrapped. The farm-yard is unpaved and sloppy. The tenant complains that rain water from the roadway in wet weather flows copiously into the yard.*

APPENDIX D.

(Extract from Report of Medical Officer of Health for fortnight ended 3rd December, 1887.)

OUTBREAK OF INFECTIOUS DISEASE IN THE NEWCASTLE UNION WORKHOUSE.

During the fortnight an extraordinary outbreak of infectious disease has been reported in the Workhouse of the Newcastle-upon-Tyne Union. The first intimation of this to the Health Department was the notification on the morning of the 23rd ult. of no less than 51 cases of Scarlet Fever. A large number of fresh cases has been reported since that date. Altogether the returns of Scarlet Fever in the Workhouse for the past fortnight have been as follows:—

Date of Notification.	No. of Notification.
November 23rd.	51
„ 24th.	39
„ 25th.	48
„ 26th.	14
„ 28th.	11
„ 29th.	1
„ 30th.	...
December 1st.	13
„ 2nd.	...
„ 3rd.	...
	<hr/> 177

* After this Report was made, the yard was repaved and the drains were properly trapped.

One remarkable feature in connection with this outbreak is the fact that hitherto not a single death has been returned.* As is well known, the mortality of this disease varies considerably in different years, being sometimes as high as 30 or even 40 per cent. of the cases, and seldom for any lengthened period lower than it has been of late years in this city. Thus the ratio of deaths to cases notified in Newcastle was:—

In 1883	...	10·8 per cent.
„ 1884	...	7·2 „
„ 1885	...	6·8 „
„ 1886	...	4·5 „

The information the Medical Officer of Health has been able to acquire of this outbreak is almost limited to the foregoing particulars.

APPENDIX E.

(Extract from the report of the Medical Officer of Health, for the fortnight ended 17th December, 1887.)

COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES.

SPECIAL REPORT.

In compliance with the instructions of the Sanitary Committee, issued in accordance with the request of the Local Government Board in their circular letter of the 5th inst., I beg to submit the following Report on the Compulsory Notification of Infectious Diseases in Newcastle-upon-Tyne.

In the letter in question of the Local Government Board are six questions to which the following answers are given :—

1.—Cases of Infectious Diseases notified during the year 1886, and the first 11 months of 1887.

Disease.	Year 1886.	First 11 months of 1887.
Small-pox	5	7
Typhus	1	36
Enteric Fever	205	294
Simple Continued Fever ...	44	84
Scarlet Fever	1,004	1,129
Diphtheria	73	70
Puerperal Fever	14	9
Relapsing Fever	2	...
TOTAL ...	1,348	1,629

* One death occurred after the date of the Report.

2.—On the receipt of every notification of a case of infectious disease, the action taken by the Department is as follows :—

- (1.) A special inspector attends at the infected house without delay, and makes a careful and exhaustive inquiry into the circumstances, filling up on a printed form details relating to all the probable channels by which infection may have been received, or is likely to be propagated, the sanitary condition of the premises, water and milk supplies, etc. All defects noted receive attention.
- (2.) The removal to Hospital of suitable cases is recommended, and, where agreed to by those concerned, is effected. Printed advice and instructions, as to the best means of preventing the spread of infection, are left at the house in every instance, and, where requisite, disinfectants are supplied gratis.
- (3.) A printed form of certificate (copy submitted),* stating that the infected premises and articles are ready for final disinfection, is also left with the householder for the signature of the Medical Attendant on the termination of the case. This certificate, when duly signed, is forwarded to the Medical Officer of Health, after which the Inspector sees to the final disinfection. After every case of Fever or Small-pox, the bedding is removed to the disinfecting station, where it is purified, and returned without charge to the owner.

Copies of the inquiry form referred to are given herewith,* printed on paper of a distinctive colour for each disease: thus, red for Scarlet Fever, green for Enteric Fever, etc. The causes of spread of infection noted on the forms are carefully inquired into by myself, or under my immediate superintendence. Such insanitary conditions as can be remedied at the time are at once dealt with; others are noted and attended to after the disinfection of the premises. The information collected on the different forms is entered in registers, of which there is one for each disease. These registers are kept under close observation; and whenever any item therein attracts attention from repetition of its occurrence—*e.g.*, locality of cases, residence on infected premises of persons engaged elsewhere, infected places of business, milk supply, school attendance, etc.—the circumstances are at once investigated, and any condition likely to cause spread of infection is, as far as practicable, removed. Finally, all of the returns are classified, arranged in numerous tables, and further examined in my Annual Reports (see Annual Report for 1886, submitted herewith, pp. 9 to 25).*

In notifying their cases the medical practitioners very often draw my attention to matters needing my interference; and on the other hand, I communicate with the notifiers whenever circumstances require. In doubtful cases of disease my opinion is often asked, and is willingly given. By these means the earlier removal to Hospital of patients suffering from fever is frequently secured, and in other ways much good results.

Altogether a large and important work is carried on under the powers relating to the notification of infectious disease.

* Given with original Report.

3.—I have not heard of a single case of intentional concealment by a medical practitioner in this city. A very few cases, not under medical treatment, have come under notice which were not reported by the householder. In one only of these (a case of Small-pox in 1884) the concealment appeared to be wilful, and the householder was fined by the Magistrates.

4.—Scarcely any practical difficulty has arisen during the five years notification has been in force. An inconsiderable number (perhaps a dozen in all) of cases have occurred in which the removal of the bedding for disinfection by the Corporation has been positively resisted. Occasionally the householder declines to have the fumigation of his rooms done by the special inspector. There is, however, remarkably little objection raised to the invariable inquiry and action which follows the notification of *every case*, no matter what the social circumstances of the patient may be. The notification of infectious disease, and the entire procedure consequent on it, is a matter every detail of which demands the exercise of tact. The success of the system in Newcastle is, I am satisfied, largely due to the use of this faculty. The manner in which the two special inspectors, solely appointed to the office of dealing with infectious disease, have carried out their part of the work, has contributed not a little to the satisfactory result.

5.—The general result on the limitation of the spread of infectious disease has been undoubtedly beneficial. Of this my Annual Reports shew abundant evidence.

6.—The only suggestions I have to offer for amendment relate to the form used in notifying cases (form submitted).* It would be better if the medical practitioners were required to state the *technical name* instead of the “nature” of the disease. The age of the patient and date of first feeling of ailment should also be stated.

Cost.—The amount paid to medical practitioners for notifying cases during the three financial years 1883–86 is £697 9s. The expense of working the system includes a proportion of the cost of disinfection, maintenance of patients in hospital, wages of inspectors, ambulance drivers, keep of horses, ambulances, etc. What this proportion is cannot be stated, as it is impossible to say how many of the cases would have been dealt with under arrangements in force before notification became law.

The sums paid for these items during the three years in question are:—

Three Years—1883-86.			
	£	s.	d.
(1) Cost of Disinfection, etc. ... (say)	313	0	0
(2) Maintenance of Patients in Hospital at the expense of the Sanitary Authority ...	1,610	17	6
(3) Wages of Inspectors and Ambulance Drivers	878	12	0
(4) Keep of Horses, Ambulances, etc., etc. ...	495	19	11

Among the expenses of notification is comprised a proportion of the amount paid for printing, stationery, etc., incurred by the Health Department.

* Given with original Report.

(Signed) HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

APPENDIX F.

City and County of Newcastle-upon-Tyne.

REPORT

ON A RECENT

OUTBREAK OF TYPHUS:

BY THE

MEDICAL OFFICER OF HEALTH.

*Presented to the Sanitary Committee on 3rd August, 1887,
and ordered to be printed.*

NEWCASTLE-UPON-TYNE:
ANDREW REID, PRINTING COURT BUILDINGS, AKENSIDE HILL.
1887.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

R E P O R T

ON A

RECENT OUTBREAK OF TYPHUS.

AFTER an absence of fourteen months Typhus was notified in Newcastle on the 16th of March last. The patient (Higgins) was a young man living at Scott's Entry, City Road, who had been working at the Exhibition. A close enquiry as to any previous case from which he might have contracted infection was entirely without success. About a fortnight afterwards (1st April) a case notified as Enteric Fever was found, on removal to Hospital, to be Typhus. The patient came from a different part of the City (Liverpool Street). Her husband on being interrogated said they had been near no fever cases, but that about a fortnight before his wife took ill (on 14th March), both she and himself had stood by the bedside of a relative who had died from *Measles* (Renshaw, Albion Yard, City Road). The medical attendant on this person, who was at once communicated with, was firmly of the opinion that the disease from which his patient, a woman, at 21 years, had died, was Measles and Pneumonia. Notwithstanding this, the case was regarded by the writer with the strongest suspicion, and the family were kept under close supervision. The result verified the action taken, for a sister of this supposed Measles case, sleeping in the same bed, was found suffering from Typhus on April 4th.

There appears to have been at least an acquaintanceship between the Higginses and the Renshaws, but no visiting between the families is known. Their homes (Scott's Entry and Albion Yard) are only a short distance apart.

From these centres infection spread by means of visitors to a number of families in the immediate neighbourhood and to several at a distance.

The last case in the outbreak was notified on 24th June, and was discharged from Hospital on 19th July.

In all, the cases of Typhus known to the Health Department have been 36 in number, including a nurse and two Enteric Fever convalescents who contracted the disease in the Fever Hospital. Exclusive of these three cases, 19 houses, containing a total of 85 occupants, are known to have been invaded. One group of 12 houses has the west-end of the City Road as a centre. The streets and entries infected are :—

City Road	...	...	1 case.
Albion Yard	...	...	1 „ (not including case of supposed Measles and Pneumonia).
Scott's Entry	...	...	3 cases.
Chapel Lane	...	...	3 „
Eddy's Entry	...	...	2 „ (Nos. 15 and 21 on following Table).
Howard Street	...	...	2 „ (2 households).
Grenville Street	1 case.
Richmond Street	4 cases (3 households).
Buxton Street	1 case.

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The remaining cases all occurred in single families at the following places :—

Bryson Terrace, Shieldfield	...	...	...	...	...	8 cases.
Liverpool Square	...	...	...	...	...	1 case.
Tyne Street	...	...	...	...	...	1 „
Byker Bank	...	...	...	...	...	1 „
Dunn's Terrace, Byker	...	...	...	...	...	1 „
Rippenden Street	...	...	...	...	...	1 „
Oak Street, Scotswood Road	...	...	...	...	...	2 cases.

15

Origin and Spread.—The origin of the first case (Renshaw, Albion Yard, certified as Measles) is absolutely unknown.

In four households the source of infection was not traced, but was probably due to undetected communication with some of the others.

In the others it was either traced to visiting, nursing by neighbours, or other intercourse. In one case, although such communication was not admitted, there is reason to suppose that it took place.

The following Table gives the names and addresses of the different households invaded, in the order of their occurrence, with the number of cases in each, the source of infection, and other details :—

PARTICULARS OF CASES OF TYPHUS FEVER KNOWN TO THE HEALTH DEPARTMENT (MARCH 16 TO JULY 19, 1887, INCLUSIVE).

No.	Date of first Notification in Household	NAME.	ADDRESS.	No. Cases in Household.	Source of Infection.	No. of In-mates.	Households Overcrowded.		Removal to Hospital agreed to.		Action taken by Householders to prevent Infection at Date of Inquiry.
							No.	Yes.	No.	Yes.	
1	1887. Mar. 15	Higgins ..	8, Scott's Entry, City Road	3	Nothing definitely ascertained. Knows the family No. 5, and is believed to have had communication with them	4	1	...	...	3	None.
2	" 31	Dickinson ...	9, Bryson Terrace ...	8	The first of these cases visited No. 1 ...	8	...	1	...	† 8	"
3	" "	Nesbitt ..	35, Liverpool Square	1	Visited Renshaw's, Albion Yard, City Road, where a death occurred, certified from Measles (probably Typhus)	3	1	...	...	1	"
4	Apr. 4	Mills ...	32, Howard Street ...	1	Visited Renshaw's, Albion Yard one of whom has since been removed to Hospital suffering from Typhus	6	1	...	...	1	"
5	" "	Renshaw ...	Albion Yard, City Road	1	A death on 14th March certified from Measles in family (supposed to be Typhus)	4	1	...	...	1	"
6	" 5	Pye ...	5, Grenville Street ...	1	Visited No. 5 ...	4	1	...	...	1	"
7	" 6	Drummond ...	22, Tyne Street ...	1	Mother of patient visited No. 5 ...	6	1	...	...	1	"
8	" 11	Forrest ...	12, Richmond Street	2	Case of Typhus among relatives—Mills, 32, Howard Street (No. 4)	5	...	1	...	2	"
9	" 12	Kirton ...	26, Byker Bank ...	1	Not known ...	4	1	...	...	1	"
10	May 3	Hudson ...	42, Howard Street ...	1	Do.	6	1	...	...	...	Using disinfectants.
11	" 7	Stuart ...	10, Chapel Lane ...	3	Visited Edington at Common Lodging House, Eddy's Entry, Sandgate, who was afterwards taken to the Infirmary and found to be suffering from Typhus (See No. 15)	7	1	...	...	3	None.
12	" 17	Luke ...	12, Richmond Street	1	Attended case in same tenement (See No. 8)	2	1	...	...	1	"
13	" 18	Kendal ...	14, City Road	1	Lived in centre of infected area (a shop)	4	1	...	...	...	Using disinfectants.
14	" 16	Davison ...	10, Dunn's Terrace, Byker...	1	Not known ...	4	1	...	...	1	None.
15	" 20	Edington ...	*Eddy's Entry, City Road ...	1	A Baker, supplied bread to Kendal, 14, City Road	...	1	...	...	1	"
16	" 23	Henry ...	32, Richmond Street	1	Nursed case No. 10 ...	2	1	...	...	1	Using disinfectants.
17	" 24	Gordon ...	24, Buxton Street ...	1	A Barber living close by the infected area	4	1	...	...	1	"
18	" 27	Harold ...	13, Ripponden Street	1	Unknown ...	6	1	...	...	1	None.
19	Jun. 10	Dixon ...	7, Oak Street	2	Mother of patient visited No. 14 ...	6	1	...	...	2	Using disinfectants.
20	" 13	Nurse Harwood	Fever Hospital, Bath Lane	1	Nursing patients in Hospital	...	1	...	...	1	"
21	" 23	May ...	† Infirmary ...	1	A Baker's Assistant at Eddy's Entry Bakehouse, took bread to the house, No. 15	...	1	...	...	1	"
Total Cases				34	Fever Hospital.	85	19	2	...	2	32
Patients in Hospital contracting Typhus ...				2		...	...	...	...	...	...
				36							

* This patient was taken from a Common Lodging House in Eddy's Entry, Sandgate, to the Infirmary; after admission he was found to be suffering from Typhus, and was removed to the Fever Hospital.
† This patient was also taken to the Infirmary (from William IV. Yard, Mirk Lane, Gateshead) for admission, and was sent on to the Fever Hospital. Had worked at the Bakehouse in Eddy's Entry, City Road.
‡ One of these had gone to stay with a brother at Byker. He called to see the rest of the family whilst ill. He was seen by the Medical Officer of Health at 9, Bryson Terrace, and removed to Hospital from that address.

From the Table it may be seen that No. 2 had visited No. 1, who probably caught his infection from household No. 5, in which the fatal case of so-called Measles (not included in the Table) had occurred. Nos. 3, 4, 6, & 7 also visited at No. 5. No. 8 was probably infected from No. 4, No. 15 from No. 11, No. 12 from No. 4, No. 15 from No. 13, No. 16 from No. 10, No. 21 from No. 13 or No. 15, etc.

In addition to the cases above recorded, two brothers (Tierney) were admitted from No. 12, Anchor Bank, City Road (in the Typhus area), suffering from Fever. They had no eruption and their symptoms were not clearly marked. The cases were entered as Continued Fever, but there is ground for suspicion that they were in reality Typhus.

Ages.—Of the cases, the ages were as follows:—

AGE PERIODS.						NO. OF CASES.
3 and under 6 years	...	...	...	...	...	1
6	„	12	„	...	...	3
12	„	20	„	...	...	13
20	„	30	„	...	...	7
30	„	40	„	...	...	6
40	„	50	„	...	...	6
Total						36

Deaths.—Of the ascertained cases of Typhus, 3 (Forrest, Edington, and Gordon, aged respectively 32, 40, and 38 years) died in Hospital, and 1 (Kendal, aged 20 years) died at home under private treatment. To these may be added the death of the so-called Measles case, not included in the foregoing Tables (Renshaw, aged 21 years), and that of the younger Tierney, aged 16 years, registered as due to Continued Fever, but probably a case of Typhus.

Several of the above were notified in error as cases of Enteric Fever. Thus in the first three households in the Table the cases were so notified. As soon as he became aware of the presence of Typhus in the Town, the Medical Officer of Health issued a circular-letter to the Medical Officers of the Dispensary and Poor Law Authority, putting them on their guard and asking their co-operation to secure the immediate removal to Hospital of every case of Typhus coming under their notice. Notwithstanding

this, owing to errors in diagnosis*, many of the patients might have been left at home as cases of supposed Enteric Fever, but for the determination to regard all reported Enteric Fever in Typhus districts as possible Typhus, and so secure its isolation in Hospital forthwith. In this way the true nature of several cases was first detected after their removal from home, when other means for preventing the spread of infection were taken.

With two exceptions (Nos. 10 and 13) all of the cases of Typhus were removed to Hospital.

Action taken by Health Department.—In every instance, with one exception, the bedding, etc., was either burnt or removed to the Disinfecting Station and returned after purification, and the rooms were fumigated by the Special Inspectors. In the instance referred to (No. 10), a case in private practice, the householder fumigated his own rooms, but declined to allow the bedding to be removed, although it was explained to him that such articles could not be properly purified by means at the disposal of private persons. As already stated, one person contracted infection from this case. The cleansing and limewashing of premises in and near the infected areas were likewise seen to.

This outbreak shows the benefit derived from the notification of disease by medical practitioners. Having had unusual opportunities for studying the behaviour of Typhus in Newcastle during the past twenty years, the writer has no hesitation in stating his opinion, that there was every prospect of the epidemic spreading rapidly if left to itself; and that without notification, which enabled the Health Department to secure the isolation of all of the cases except two, this disease would at the present moment have been raging in the city. From the few instances above cited some idea may be formed of the readiness with which the infection of this disease spreads. It is now 16 years since Newcastle suffered severely from Typhus, and her present citizens have almost lost the recollection of its extent and malignancy in bygone times. Yet twenty years ago the disease was actually endemic here—never

*Failure to diagnose Typhus at the most critical period, viz., the beginning of an outbreak, is a matter of constant occurrence, not to be wondered at under the circumstances, the young practitioners in the Dispensary and elsewhere never having seen a case of the disease before beginning practice. The effect of this was commented on in the Annual Reports of the Medical Officer of Health for 1881 (pp. 16-17), and 1882 (p. 26).

absent—and at the same time its fatality was very high. Thus the admissions to the Fever Hospital from Typhus were :—

A.D.		No. of Cases.		Mortality per cent. to Cases.
In 1865	...	181	...	23·2
„ 1866	...	513	...	22·2
„ 1867	...	252	...	14·3
„ 1868	...	371	...	18·8
Yearly average		<u>329</u>	Mean death rate per cent.	<u>19·9</u>

Some idea of the highly infectious nature of Typhus may be formed from the following extracts, from Annual Reports of the Medical Officer of Health, showing the extent to which the various officials of the Fever Hospital suffered from that disease in discharge of their duty :—

*Annual Report for 1879.—p. 14. Typhus contracted in Hospital.**

- A.D.
 1865.—2 nurses, 1 matron, 1 Inspector ill. The latter died.
 1866.—1 matron died. 1 Inspector and 6 nurses ill. 2 of the latter died.
 1869.—1 night nurse ill.
 1870.—1 night nurse, 1 cook, and 1 servant ill.
 1871.—8 nurses, and 1 servant ill.
 1872.—Assistant matron, and a nurse ill. The nurse died.

“During this period, one Physician and three Medical Officers (including the writer), caught Fever at the Hospital, and one of the latter died; 27 residents in the Hospital, viz., 19 nurses, 3 matrons, 2 Inspectors, and 3 servants, contracted Typhus, of whom 5 died, viz., 3 nurses, 1 matron, and 1 Inspector.”

Annual Report 1882.—pp. 12–13.

“During the year, the number of nurses attending for longer or shorter periods on Typhus patients was fourteen, of which four were engaged temporarily, and took duty a few days only. Of these, nine contracted Typhus, and two died. * * * * Contrasting favourably with the above returns, in the Typhus Wards are those of the adjacent Small-pox block, in which nine different nurses were engaged for longer or shorter terms during the year, all except one (who had had Small-pox), being re-vaccinated immediately before taking duty. None caught Small-pox. One of these Small-pox nurses was afterwards transferred to the Typhus Wards and caught Fever.” *

* * Relating to the nurses struck down by Fever is the following

* Prior to 1873, it was the usual practice to fill up vacancies in the nursing staff from the list of former female patients after their recovery from Typhus. But for this the number of nurses struck down would have been much greater.

statement:—"There is great difficulty in filling the places of those thus disabled. Anyone appointed to a vacancy is taken on duty with the almost certainty that in a week or two she will herself become a patient, and her place be taken by another. The knowledge of this is exceedingly depressing to the nurses themselves, and unfits them for their dangerous duty."

Since the establishment of the Health Department in 1873, Typhus has made its appearance no less than fourteen times, but on each occasion has been successfully stamped out by the reporting of cases as they occurred, and the action following thereon. It is confidently maintained that every succeeding outbreak of this dread disease—for we may rely on the re-introduction of its virus among our poorer population from time to time—will, as on the present occasion, under early notification, together with isolation of cases and disinfection of infected premises and things, be extinguished before it has had time to acquire much of its well-known force and virulence.

The experience of the recent outbreak is decidedly in favour of the Corporation having in this disease, among others, compulsory powers to remove to Hospital patients without means of isolation. As already stated, the removal of all except two was effected voluntarily. Very many of these agreed to go because they or their relatives knew the Medical Officer of Health as their Dispensary Doctor years ago. But this state of things cannot always exist. Strangers come to the town, and the time will arrive when a different Medical Officer of Health may find his persuasive efforts less effective in prevailing on the poor to part with their infective sick. On the present occasion, two out of the whole number declined to go to Hospital, and what was the result? In one case, a neighbour who came to nurse the patient, caught the disease herself, and had to be taken to Hospital. In the other, two bakers who supplied bread to the house and shop occupied by the parents of the patient, caught the disease and were removed to Hospital, where one of them died.

Another lesson from the outbreak is the great importance of medical students being taught the different varieties of fever and other infectious diseases, as part of their general curriculum. It is too late to learn this as practitioners, either in a Dispensary or among private

patients. *Then* the acquisition of the knowledge becomes a series of ghastly experiments at the expense of the patients, and to the great danger of the public.

At the present time no English University or medical examining body requires compulsory attendance at a Hospital for Infectious Diseases as part of the curriculum for its degree or diploma, with the single exception of the University of Durham. The University of Durham makes such attendance one of the requirements for its newly instituted License in Sanitary Science.

It is in the public interest, in the highest degree desirable that every medical student in the kingdom should undergo such training. Infectious diseases are the ailments he is inevitably and most frequently called in to advise on when he enters into general practice, and at such times the health of entire families, or even communities, may depend on the promptitude and decisiveness of his diagnosis. Yet of this class of ailments the student actually sees nothing! He is made familiar with obscure cases and rare diseases, till it is no wonder if he imagines his private practice is to be made up of such. There, the first case of measles staggers him. He has never seen its face before!

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

Town Hall, Newcastle-on-Tyne,

30th July, 1887.

APPENDIX G.

City and County of Newcastle-upon-Tyne.

NOTIFICATION OF MEASLES.

EXTRACT FROM REPORT OF THE MEDICAL OFFICER OF HEALTH
FOR THE FORTNIGHT ENDED 10TH SEPT., 1887.

Ordered by the Sanitary Committee to be printed and issued.

Newcastle-upon-Tyne:
ANDREW REID, PRINTING COURT BUILDINGS, AKENSIDE HILL.

1887.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

NOTIFICATION OF MEASLES.

Extract from Report of the Medical Officer of Health for the Fortnight ended 10th Sept., 1887.

As desired by the Committee, the Medical Officer of Health submits the following reasons for recommending that Measles be included in the list of diseases notifiable by medical practitioners :—

It is the only infectious disease which has been severely fatal this Spring—largely increasing the death rate—and it is the only one not notified.

Measles has become the most fatal disease in the City. We have no official knowledge of it except from the Registrars of Deaths. The following return shows the number of deaths from the disease in recent years.

DEATHS IN NEWCASTLE-UPON-TYNE.

A.D.	Deaths.	A.D.	Deaths.
1881 	4	1885 	359
1882 	7	1886 	42
1883 	63	1887 (1st half-year.) ...	164
1884 	15		

One of the chief objects aimed at is to enable the Sanitary Authority to secure the exclusion of all cases from schools whilst in a suspicious or catarrhal stage, when the danger of infection is great.

Another object is to enable the Authority to advise School Principals as to the closure of their schools.

The notification of Measles is provided for in the Preston, Reading, and Blackpool Local Acts, and Warrington has it inserted as a temporary measure.

Jarrow has recently applied for it.

That notification in other diseases is advantageous may be inferred from the following returns of deaths and cases, both of which show a considerable reduction since the adoption of the principle of notification five years ago.

DEATHS.

DISEASE.	1881.	1882.	1883.	1884.	1885.	1886.	
Small-pox	10	57	60	12	3	...	Marked improvement.
Scarlet Fever...	52	82	124	156	83	45	" "
Diphtheria	6	5	11	16	26	19	.....
Typhus	20	30	24	6	7	...	Marked improvement.
Enteric Fever ...	38	30	42	47	56	34	.....
Continued Fever ...	6	1	7	3	4	...	Improvement.

CASES NOTIFIED UNDER THE ACT.

DISEASE.	1883.	1884.	1885.	1886.	
Small-pox	493	174	70	5	Marked improvement.
Typhus	90	17	9	1	" "
Enteric Fever ...	216	260	253	205	Improvement.
Simple Contd. Fever...	45	41	64	44	.....
Puerperal Fever ...	7	16	11	14	.....
Scarlet Fever...	1,152	2,167	1,227	1,004	Marked improvement.
Diphtheria	29	76	93	73	.....
Relapsing Fever ...	...	...	...	2	.....
TOTAL	2,032	2,751	1,727	1,348	

Since notification there has been a marked improvement both in the number of cases and of deaths from Small-pox, Scarlet Fever, and Typhus. The total number of notifications has fallen from 2,032 in 1883, to 1,348 in 1886—a reduction of about 30 per cent.

An outbreak of Typhus in Newcastle has just been stamped out, which could not have been done so promptly as it was without notification of cases. (For particulars of the extent of this disease in past years, see recent Special Report, printed by order of the Sanitary Committee.)

A trial of the notification of Measles for a period of, say, five years would probably be found the most desirable course to adopt.

(Signed),

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

*Town Hall, Newcastle-on-Tyne,
Sept., 1887.*

